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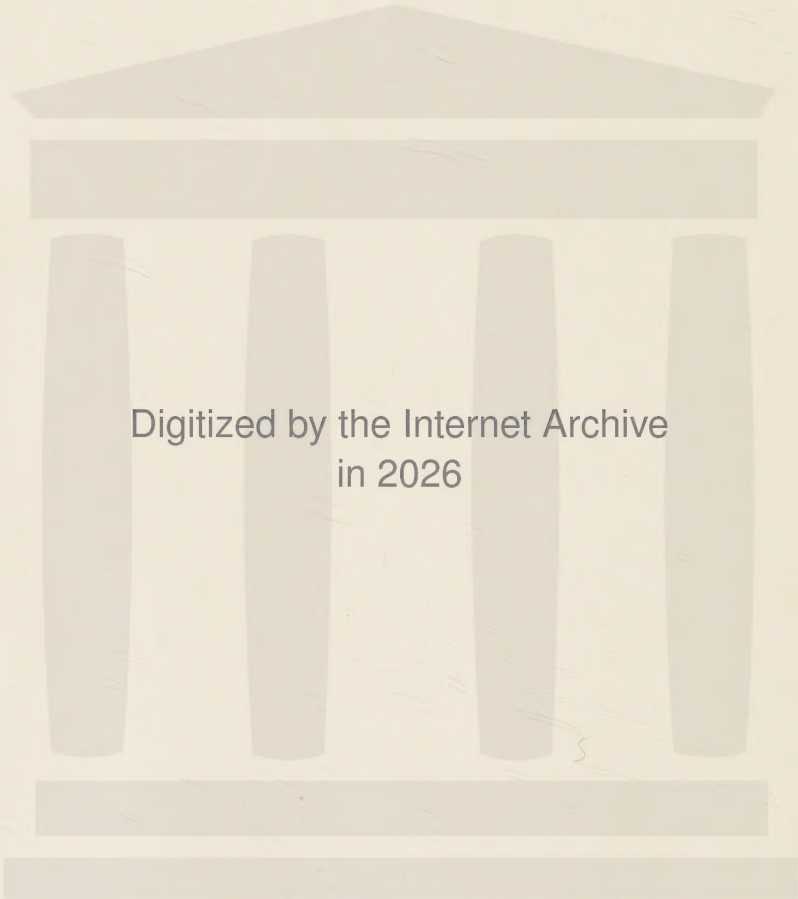

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# PROCEEDINGS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND.

SESSION

MDCCCCV.–MDCCCCVI.

VOL. XL.

EDINBURGH:

PRINTED FOR THE SOCIETY BY NEILL AND COMPANY LTD.

MDCCCCVI.

# PROCEEDINGS

OF THE

# Society of Antiquaries of Scotland

*ONE HUNDRED AND TWENTY-SIXTH SESSION*

1905-1906

VOL. IV.—FOURTH SERIES

Edinburgh

PRINTED FOR THE SOCIETY BY NEILL AND COMPANY LTD.

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## THE RHIND LECTURESHIP.

(*Instituted* 1874, *in terms of a Bequest for its endowment by the late* Alexander Henry Rhind *of Sibster, Hon. Mem. S.A. Scot.*)

SESSION 1905–1906.

Rhind Lecturer in Archæology—Rev. A. H. Sayce, M.A., LL.D., D.D., F.S.A. Scot., Professor of Assyriology, Queen's College, Oxford.

# LAWS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND,

## INSTITUTED NOVEMBER 1780 AND INCORPORATED BY ROYAL CHARTER 6TH MAY 1783.

(*Revised and adopted November* 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHÆOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.

2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.

3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two Members of the Council. Admission shall be by ballot.

4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council, and balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the List of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years. One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other office-bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreements subsisting between the Society and the Government, the Board of Manufactures shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

18. The Annual General Meeting of the Society shall take place on St Andrew's Day, the 30th of November, or on the following day if the 30th be a Sunday.

19. The Council shall have power to call Extraordinary General Meetings when they see cause.

20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

21. Every proposal for altering the Laws must be made through the Council; and the Secretaries, on instructions from the Council, shall cause intimation thereof to be made to all the Fellows at least one month before the General Meeting at which it is to be determined on.

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*Form of Special Bequest.*

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of , and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

*General Form of Bequest.*

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ sterling [*to be used for the general purposes of the Society*] [or, *to be used for the special purpose, or object, of* ], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being.

# LIST OF THE FELLOWS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND.

NOVEMBER 30, 1906.

## PATRON.

HIS MAJESTY THE KING.

1879. ABERCROMBY, Hon. JOHN, 62 Palmerston Place.
1853.*ABERDEIN, FRANCIS, Garvocklea, Laurencekirk.
1896.*ADAM, FRANK, c/o The Straits Trading Co., Kuala Lumpur, Selangor, Federated Malay States, Straits Settlements.
1898. ADAM, STEPHEN, 199 Bath Street, Glasgow.
1889. AGNEW, ALEXANDER, Procurator-Fiscal, Balwherrie, Dundee.
1899. AGNEW, Sir ANDREW N., Bart., Lochnaw Castle, Stranraer.
1884. AGNEW, Sir STAIR, K.C.B., M.A., 22 Buckingham Terrace.
1892. AILSA, The Most Hon. The Marquis of, Culzean Castle, Maybole.
1892. AITKEN, JAMES H., Gartcows, Falkirk.
1906. AITKEN, Dr JOHN, Ardenlea, Falkirk.
1905. ALEXANDER, R. S., Grant Lodge, 18 Lomond Road, Trinity.
1886. ALEXANDER, W. LINDSAY, Pinkieburn, Musselburgh.
1897. ALLAN, Rev. ARCHIBALD, Channelkirk Manse, Oxton, Berwickshire.
1900. ALLARDYCE, Col. JAMES, LL.D., of Culquoich, 3 Queen's Terrace, Aberdeen.
1864.*ANDERSON, ARCHIBALD, 30 Oxford Square, London, W.
1884. ANDERSON, CHARLES M., Gardenhurst, Gedgeley Park, Prestwich, Manchester.
1889. ANDERSON, JAMES, Carronvale, Wardie Road.
1897. ANDERSON, Major JOHN HAMILTON, 2nd East Lancashire Regiment, c/o Messrs Cox & Co., 16 Charing Cross, London.
1902.*ANDERSON, Major ROBERT DOUGLAS, c/o The Manager, Lloyd's Bank, Paignton, Devon.
1871.*ANDERSON, Sir ROBERT ROWAND, LL.D., H.R.S.A., Architect, 16 Rutland Square.

An asterisk (*) denotes Life Members who have compounded for their Annual Contributions.

1894. Anderson, William, Arns Brae, Bearsden, Dumbartonshire.
1887. Anderson-Berry, David, M.D., F.R.S.E., 23 Grosvenor Crescent, St Leonards-on-Sea.
1894. Angus, Robert, Craigston House, Lugar, Ayrshire.
1882. Annandale, Thomas, M.D., D.C.L., Professor of Clinical Surgery, University of Edinburgh, 34 Charlotte Sq.
1900. Anstruther, Sir Ralph W., Bart., of Balcaskie, Pittenweem.
1897. Anstruther-Thomson, William, Major, Royal Horse Guards, Kilmany, Fife.
1885. Ardwall, The Hon. Lord, LL.D., 14 Moray Place.
1901. Argyle, His Grace The Duke of, K.T., LL.D., Inveraray Castle, Inveraray.
1878.*Armstrong, Robert Bruce, 6 Randolph Cliff.
1904. Arnott, Brigade Surgeon, Lieut.-Col. James, M.D., 8 Rothesay Place.
1901. Arthur, Alexander Thomson, Physician, Blair Devenick, Cults, Aberdeen.
1904. Arthur, Sir Matthew, Bart., of Carlung, Fullarton, Troon.
1889. Atholl, His Grace The Duke of, K.T., Blair Castle, Blair Atholl.

1868.*Bain, Joseph, Bryn Dewi, St David's, S. Wales.
1889. Bain, William, 42 Moray Place, Edinburgh.
1892. Bain, William, Lochmaddy, by Oban.
1900.*Baird, John G. Alexander, of Wellwood and Adamton, Monkton, Ayrshire.
1891. Baird, William, Clydesdale Bank, Portobello.
1901.*Balcarres, The Right Hon. Lord, M.P., 74 Brook Street, London,—*Vice-President.*
1883. Balfour, Charles Barrington, M.P., of Newton Don, Kelso.
1903. Balfour, The Hon. James Moncreiff, 6 Rothesay Terrace.
1897. Bannerman, W. Bruce, F.S.A., The Lindens, Sydenham Road, Croydon.
1890. Bannerman, William, M.A., M.D., West Park, 30 Polwarth Terrace.
1896. Barbour, James, Architect, St Christopher's, Dumfries.
1897. Barclay-Allardice, Robert, M.A., Rosehill, Lostwithiel, Cornwall.
1899. Barnard, Francis Pierrepont, M.A. Oxon., Bilsby House, near Alford, Lincolnshire.
1897. Barnett, Rev. T. R., St Andrew's Manse, Bo'ness.
1880. Barron, James, Editor of *Inverness Courier*, Inverness.
1891. Baxter, Rev. George Chalmers, U.F.C. Manse, Cargill, Guildtown, Perth.
1891.*Bayne, Thomas, 69 West Cumberland Street, Glasgow.
1884.*Beaton, Capt. Angus J., Bayfield, North Kessock, Inverness.
1877. Beaumont, Charles G., M.D., Old Manor House, Epsom, Surrey.
1903. Bedford, J. G. Hawksley, 5 Belvoir Terrace, Scarborough.
1903. Bell, R. Fitzroy, Advocate, Temple Hall, Coldingham.
1889.*Bell, Thomas, of Belmont, Hazelwood, Broughty Ferry.
1877. Bell, William, Bridge House, 181 Queen Victoria Street, London, E.C.
1890.*Beveridge, Erskine, LL.D., St Leonard's Hill, Dunfermline.
1886.*Beveridge, Henry, Pitreavie House, Dunfermline.
1891. Beveridge, James, Church of Scotland's Training College, 4 Blythswood Drive, Glasgow.
1895.*Bilsland, William, 45 Hydepark Street, Glasgow.
1877.*Bilton, Lewis, W.S., 5 Abinger Gardens.

1891. Bird, George, 33 Howard Place.
1906. Bisset, Alexander M., Bertha Cottage, Bathgate.
1882. Black, William George, Ramoyle, Dowanhill Gardens, Glasgow.
1885. Blaikie, Walter Biggar, 6 Belgrave Crescent.
1891. Blair, Rev. William, M.A., D.D., Leighton Manse, Dunblane.
1879. Blanc, Hippolyte J., R.S.A., Architect, 25 Rutland Square.
1901. Blythswood, The Right Hon. Lord, Blythswood, Renfrew.
1887. Bogie, Alexander, Banker, 48 Lauder Road.
1885. Bompas, Charles S. M., 121 Westbourne Terrace, London.
1880.*Bonar, Horatius, W.S., 3 St Margaret's Road.
1904.*Bontein, James Shelley, J.P., of Glencruitten, Oban.
1905. Booker, Robert P. Lee, Eton College, Windsor.
1898. Borland, Rev. R., Minister of Yarrow, Selkirkshire.
1903. Borthwick, Henry, Borthwick Castle, Midlothian.
1899. Boswall, James Donaldson, W.S., Donaldson House, Wardie.
1893. Boyle, The Hon. Robert E., Colonel, 95 Onslow Square, London.
1884. Boynton, Thomas, Norman House, Bridlington Quay, Hull.
1883. Brand, David, Sheriff of Ayrshire, 42 Coates Gardens.
1891. Brand, James, C.E., 10 Marchmont Terrace, Kelvinside, Glasgow.
1884.*Breadalbane, The Most Hon. The Marquess of, K.G., Taymouth Castle.
1887. Brook, Alexander J. S., 21 Chalmers Street,—*Curator of Museum.*
1904. Brook, Edward J., of Hoddom Castle, Ecclefechan.
1878. Broun - Morison, John Broun, of Finderlie, Murie House, Errol.
1906.*Brown, Adam, Netherby, Galashiels.
1902. Brown, Charles, Dundas Lodge, Kerse, Falkirk.
1887. Brown, George, 2 Spottiswoode Street.
1884. Brown, G. Baldwin, M.A., Professor of Fine Art, University of Edinburgh, 50 George Square.
1902. Brown, P. Hume, M.A., LL.D., Fraser Professor of Ancient History and Palæography, University of Edinburgh, 20 Corennie Gardens.
1897. Brown, Richard, C.A., 22 Chester Street.
1884. Browne, Right Rev. G. F., D.D., The Palace, Redland Green, Bristol.
1882. Browne, George Washington, R.S.A., Architect, 8 Albyn Place.
1892. Bruce, George Waugh, Banker, Leven, Fife.
1882. Bruce, James, W.S., 59 Great King Street.
1893. Bruce, John, Inverallan, Helensburgh.
1898.*Bruce, John, of Sumburgh, Shetland, 21 Drumsheugh Gardens.
1880. Bruce, Rev. William, B.D., Dunimarle, Culross.
1896. Bruce, William Balfour, Allan View, Dunblane.
1905. Bruce, The Right Hon. The Lord, Broomhall, Dunfermline.
1902. Bryce, Thomas H., M.A., M.D., 2 Granby Terrace, Glasgow.
1889. Bryce, William Moir, 11 Blackford Road.
1896. Buchan, Alexander, LL.D., Secretary, Scottish Meteorological Society, 42 Heriot Row.
1885.*Buchanan, Thomas Ryburn, M.A., M.P., 12 South Street, Park Lane, London, W.
1905. Burgess, Francis, Secretary of the Church Crafts League, 27 Lechmere Road, Willesden Green, London.
1887.*Burgess, Peter, Craven Estates Office, Coventry.
1882. Burnet, John James, A.R.S.A., Architect, 18 University Avenue, Hillhead, Glasgow.
1892. Burnett, Rev. J. B., B.D., The Manse, Fetteresso, Stonehaven.

1897. Burn - Murdoch, W. G., Arthur Lodge, 60 Dalkeith Road.
1887. Burns, Rev. Thomas, D.D., Croston Lodge, Chalmers Crescent.
1905. Burr, Rev. G. F., Highfields Park, Halesowen, Worcestershire.
1889. Burr, Rev. P. Lorimer, D.D., Manse of Lundie and Fowlis, Dundee.
1901. Bute, The Most Hon. The Marquess of, Mount Stuart, Rothesay.
1901. Butler, C. M'Arthur, Secretary of the Society of Architects, Staple Inn Buildings, South Holborn, London, W.C.

1898. Cadenhead, James, A.R.S.A., R.S.W., 15 Inverleith Terrace.
1880. Caldwell, James, Craigielea Place, Paisley.
1898. Callander, John Graham, Benachie Distillery, by Insch, Aberdeenshire.
1887. Cameron, J. A., M.D., Firhall, Nairn.
1890. Cameron, Richard, 1 St David Street.
1905. Cameron-Swan, Donald, Craigbhan, Mayfield Road, Sanderstead, Surrey.
1902. Campbell, The Right Hon. Lord Archibald, J.P., D.L., Coombe Hill Farm, Kingston-on-Thames.
1899. Campbell, Archibald, Park Lodge, 62 Albert Drive, Pollokshields, Glasgow.
1906. Campbell, Donald Graham, M.B., C.M., 28 North Street, Elgin.
1886. Campbell, Sir Duncan Alexander Dundas, Bart., of Barcaldine and Glenure, 16 Ridgeway Place, Wimbledon.
1865.*Campbell, Rev. James, D.D., The Manse, Balmerino, Fifeshire.
1874.*Campbell, Right Hon. James A., LL.D., of Stracathro, Brechin.
1901. Campbell, Lieut.-Col. John, 30 Waterloo Place.
1904. Campbell, Joseph D., Solicitor, 142 West George Street, Glasgow.
1882.*Campbell, Patrick W., W.S., 25 Moray Place.
1883. Campbell, Walter J. Douglas, of Innis Chonain, Loch Awe.
1877.*Campbell-Bannerman, Right Hon. Sir Henry, G.C.B., LL.D., M.P., Belmont Castle, Meigle.
1901. Carfrae, George, 77 George Street.
1906. Carmichael, Evelyn G. M., Barrister-at-Law, 10 King's Bench Walk, London.
1891. Carmichael, James, of Arthurstone, Ardler, Meigle.
1888.*Carmichael, Sir Thomas D. Gibson, Bart., Malleny, Balerno.
1901.*Carnegie, Andrew, LL.D., of Skibo, Skibo Castle, Dornoch.
1905. Carnegie, Major D. C. S. Lindsay, 6 Playfair Terrace, St Andrews.
1871.*Cartwright, Thomas Leslie Melville, Melville House, Collessie, Fife.
1896. Caw, James L., Curator of Scottish National Portrait Gallery, Queen Street.
1901. Cawdor, The Right Hon. Earl, Stackpole Court, Pembroke.
1890. Chalmers, P. Macgregor, Architect, 95 Bath Street, Glasgow.
1889. Chatwin, J. A., Wellington House, Edgbaston, Birmingham.
1895. Chisholm, A. W., Goldsmith, 7 Claremont Crescent.
1903. Chisholm, Edward A., 40 Great King Street.
1901. Christie, Miss Ella R., 19 Buckingham Terrace, and Cowden, Dollar.
1898. Christie, Rev. J. G., B.D., Minister of Helensburgh.
1882. Christison, David, M.D., LL.D., 20 Magdala Crescent,—*Vice-President.*
1902. Clark, Archibald Brown, M.A., University Lecturer on Economic History, 16 Comely Bank Street.
1889. Clark, David R., M.A., 8 Park Drive West, Glasgow.
1885. Clark, George Bennet, W.S., 15 Douglas Crescent.
1905. Clark, James, Advocate, 10 Drumsheugh Gardens.

1871.*Clark, Sir John Forbes, Bart., LL.D., of Tillypronie, Aberdeenshire.
1896. Clark, Thomas Bennet, C.A., Newmilns House, Balerno.
1879. Cleland, John, M.D., LL.D., Professor of Anatomy, University of Glasgow.
1903. Clephan, Robert Coltman, Marine House, Tynemouth.
1880. Clouston, Thomas S., M.D., Tipperlinn House, Morningside Place.
1905. Clyde, James Avon, K.C., 27 Moray Place.
1891. Coats, Sir Thomas Glen, Bart., of Ferguslie, Paisley.
1905.*Cochrane, Kenneth, Newfaan, Galashiels.
1901.*Cochran-Patrick, Mrs Ella A. K., Woodside, Beith.
1898. Cochran-Patrick, Neil J. Kennedy, of Woodside, Advocate, 34 Heriot Row.
1895. Corrie, Adam J., 5 Neville Park, Tunbridge Wells.
1901. Courtney, Charles J., Librarian, Minet Public Library, Knatchbull Road, London, S.E.
1891. Coutts, Rev. Alfred, B.D., 8 John's Place, Leith.
1879.*Cowan, Rev. Charles J., B.D., Morebattle, Kelso.
1887. Cowan, John, W.S., St Roque, Grange Loan.
1888. Cowan, William, 47 Braid Avenue.
1893.*Cox, Alfred W., Glendoick, Glencarse, Perthshire.
1899. Cox, Benjamin C., Largo House, Largo, Fife.
1901.*Cox, Douglas H., 34 Drumsheugh Gardens.
1882. Crabbie, George, 8 Rothesay Terrace.
1892. Craig-Brown, T., Woodburn, Selkirk.
1900. Cran, John, 11 Brunswick Street.
1880.*Cran, John, Kirkton, Inverness.
1903. Crawford, Donald, M.A., Advocate, Sheriff of Aberdeen, 35 Chester Street.
1861.*Crawfurd, Thomas Macknight, of Cartsburn, Boscombe Towers, Bournemouth.
1905. Cree, James Edward, Tusculum, North Berwick.
1889. Crombie, Rev. James M., The Manse, Cote des Neiges, Montreal, Canada.
1886. Cross, Robert, 13 Moray Place.
1891. Cullen, Alexander, Architect, 3 Blythswood Square, Glasgow.
1904. Cunningham, D. J., D.C.L., LL.D., M.D., Professor of Anatomy, University of Edinburgh, 18 Grosvenor Crescent.
1903. Cunningham, Henry J., Worcester College, Oxford.
1891. Cunningham, James Henry, C.E., 2 Ravelston Place.
1893. Cunnington, B. Howard, Devizes.
1893. Curle, Alexander O., W.S., 8 South Learmonth Gardens, — *Secretary.*
1889.*Curle, James, jun., Priorwood, Melrose,—*Librarian.*
1886.*Currie, James, Larkfield, Wardie Road.
1879.*Cursiter, James Walls, Albert St., Kirkwall.

1879. Dalgleish, J. J., Brankston Grange, Stirling.
1901. Dalkeith, The Right Hon. Earl of, Eildon Hall, St Boswells.
1893. Dalrymple, Right Hon. Sir Charles, Bart., Newhailes, Mid-Lothian.
1883. Dalrymple, Hon. Hew Hamilton, Lochinch, Wigtownshire.
1880. Dalrymple, J. D. G., Meiklewood, Stirling.
1872.*Davidson, Hugh, Procurator-Fiscal, Braedale, Lanark.
1886.*Davidson, James, Solicitor, Kirriemuir.
1903. Deas, A. Orr, LL.B., Advocate, 7 Forres Street.
1901. Dewar, T. W., of Harperfield, Sandilands, Lanarkshire.
1901. Dick, Rev. James, Blackwood, Auldgirth, Dumfriesshire.

1898. Dick, Rev. Robert, Colinsburgh, Fife.
1895. Dickson, William K., Advocate, 8 Gloucester Place,—*Secretary*.
1882.*Dickson, William Traquair, W.S., 11 Hill Street.
1886.*Dixon, John Henry, Dundarach, Pitlochry.
1899. Dobie, William Fraser, 47 Grange Road.
1887. Dodds, Rev. James, D.D., The Manse, Corstorphine.
1905. Dollar, Robert, 134 California Street, San Francisco, U.S.A.
1895. Donaldson, Henry T., British Linen Bank, Nairn.
1905. Donaldson, Hugh, 101 Main Street, Camelon, Falkirk.
1867.*Donaldson, James, LL.D., Principal of the University of St Andrews.
1891. Donaldson, Robert, M.A., Headmaster, Lochend Road Public School, 34 Duddingston Park, Portobello.
1861.*Douglas, David, 10 Castle Street.
1895. Douglas, Sir George, Bart., Springwood Park, Kelso.
1902. Douglas, R. Smeaton, Art and Writing Master, Ayr Academy.
1885. Douglas, Rev. Sholto D. C., Douglas Support, Coatbridge.
1881.*Douglas, W. D. Robinson, Orchardton, Castle-Douglas.
1893. Dowden, Right Rev. John, D.D., LL.D., Bishop of the Episcopal Church in Edinburgh, 13 Learmonth Terrace.
1874. Dowell, Alexander, 13 Palmerston Place.
1895. Downie, Lieut.-Col. Kenneth Mackenzie, M.D., Pentland Cottage, Gillespie Road, Colinton.
1900. Drummond, James W., Westerlands, Stirling.
1896.*Drummond, Robert, C.E., Fairfield, Paisley.
1878. Drummond, William, 4 Learmonth Terrace.
1895.*Drummond-Moray, Capt. W. H., of Abercairney, Crieff.
1891. Duff, Thomas Gordon, of Drummuir, Keith.
1902. Duff-Dunbar, Mrs L., of Ackergill, Ackergill Tower, Caithness.
1872.*Duke, Rev. William, D.D., St Vigeans, Arbroath.
1878. Dunbar, Sir Archibald Hamilton, Bart., of Northfield, Duffus House, Elgin.
1887. Duncan, G. S., Dunmore Villa, Blairgowrie.
1877.*Dundas, Ralph, C.S., 16 St Andrew Square.
1902. Dunedin, The Right Hon. The Lady, 7 Rothesay Terrace.
1875. Duns, Rev. John, D.D., 5 Greenhill Place,—*Curator of Museum*.
1904. Dyer, Edmund Eustace, M.B., C.M., Mar Place House, Alloa.

1892.*Edwards, John, 4 Great Western Terrace, Glasgow.
1904. Eeles, Francis Carolus, 105 Adelaide Road, London.
1885.*Elder, William Nicol, M.D., 6 Torphichen Street.
1901. Elgin and Kincardine, The Right Hon. The Earl of, K.G., G.C.S.I., LL.D., Broomhall, Dunfermline.
1880. Elliot, John, of Binks, Yarborough Villa, Elmgrove, Southsea.
1889. Erskine, David C. E., M.P., of Linlathen, Linlathen House, Broughty Ferry.

1895. Farquharson, Major James, Caledonian United Service Club, Edinburgh.
1880.*Faulds, A. Wilson, Knockbuckle House, Beith.
1904. Ferguson, James Archibald, Banker, Primrose Villa, Primrose Bank Road, Trinity.
1890. Ferguson, Prof. John, LL.D., University, Glasgow.

1890. Ferguson, Rev. John, B.D., Manse of Aberdalgie, Perthshire.
1892. Ferguson, John, Writer, Duns.
1875. Fergusson, Sir James R., Bart., of Spitalhaugh, West Linton.
1899.*Findlay, James Leslie, Architect, 10 Eton Terrace.
1892.*Findlay, John R., 27 Drumsheugh Gardens.
1905. Findlay, Robert de Cardonnel, of Easterhill, 14 Stafford Place, London.
1880. Finlay, John Hope, W.S., 19 Glencairn Crescent.
1885. Fleming, D. Hay, LL.D., 4 Chamberlain Road.
1888. Fleming, James, jun., Kilmory, Skelmorlie, Ayrshire.
1895. Fleming, James Stark, Inverleny House, Callander.
1893.*Fleming, Rev. James, M.A., Minister of Kettins.
1875.*Foote, Alexander (no address).
1883. Fox, Charles Henry, M.D., 35 Heriot Row.
1862.*Fraser, Alexander, 17 Eildon Street.
1902. Fraser, Edward D., 50 Moray Place.
1898. Fraser, Hugh Ernest, M.A., M.D., Medical Superintendent, Royal Infirmary, Dundee.
1886. Fraser, James L., Castle Tolmie, Inverness.
1896. Fullerton, John, 1 Garthland Place, Paisley.

1890. Garden, Farquharson T., 4 Rubislaw Terrace, Aberdeen.
1891.*Garson, William, W.S., 60 Palmerston Place.
1891.*Garstin, John Ribton, D.L., M.A., Braganstown, Castlebellingham, Co. Louth, Ireland.
1898. Gaythorpe, Harper, Prospect Road, Barrow-in-Furness.
1886. Gebbie, Rev. Francis, 20 Lynedoch Place.
1877. Gibb, John S., 8 Cobden Crescent.
1897. Gibson, Rev. John Mackenzie, M.A., 22 Regent Terrace.
1903. Gibson, William, M.A., 9 Danube Street.
1896. Gillies, Patrick Hunter, M.D., Ballachuan, Balvicar, Oban.
1903. Gilruth, James David, M.A., M.B., C.M., Hyde Park House, Arbroath.
1901. Gladstone, Sir John R., Bart., of Fasque, Laurencekirk.
1885. Glen, Robert, 32 Dublin Street.
1901. Gordon, The Hon. J. E., 44 Albert Court, Prince's Gate, London.
1884. Gordon, James, W.S., 8 East Castle Road, Merchiston.
1889. Gordon, William, of Tarvie, 60 South Street, St Andrews.
1883. Gordon-Gilmour, Lt.-Col. Robert, C.B., D.S.O., of Craigmillar, The Inch, Liberton.
1869.*Goudie, Gilbert, 31 Great King Street.
1898. Gourlie, James, Lieut. R.F.A., Aurungabad, Deccan, India.
1892. Graham, Robert C., Skipness, Argyll.
1888. Grant, F. J., W.S., Lyon Office, H.M. General Register House.
1905. Grant, James, L.R.C.P. and S., Seafield House, Stromness.
1903. Grant, John Macpherson, yr. of Ballindalloch, Old Milton, Kingussie.
1902. Grant, P. A. H., of Druminnor, Rhynie, Aberdeenshire.
1904. Gray, Baxter, Springbank, Broughty Ferry.
1904. Gray, Rev. John, 9 Whitehouse Terrace.
1894. Gray-Buchanan, A. W., Parkhill, Polmont.
1891. Green, Charles E., The Hollies, Gordon Terrace.
1903. Greenwood, William de R., LL.D., Barrister-at-Law, Beaumaris, Spring Grove, Isleworth, Middlesex.

1887. Greig, Andrew, C.E., 3 Duntrune Terrace, Broughty Ferry.
1886.*Greig, T. Watson, of Glencarse, Perthshire.
1899. Grewar, David S., Dalnasnaught, Glenisla, Alyth.
1880. Grieve, Symington, 11 Lauder Road.
1871.*Grub, Very Rev. George, Dunmore Parsonage, Larbert.
1884.*Guthrie, Charles J., Advocate, K.C., Sheriff of Ross, Cromarty, and Sutherland, 13 Royal Circus.
1904. Guthrie, Sir James, LL.D., President of the Royal Scottish Academy, 41 Moray Place.
1899. Guthrie, John, Solicitor, Town Clerk of Crail.
1874. Guthrie, Rev. Roger R. Lingard, Taybank House, Dundee.
1905. Guthrie, Thomas Maule, Solicitor, Brechin.

1861.*Haddington, The Right Hon. The Earl of, K.T., Tynninghame, Prestonkirk.
1904. Haldane, R. C., of Lochend, Ollaberry, Lerwick, Shetland.
1901.*Hamilton of Dalzell, The Right Hon. Lord, Dalzell, Motherwell.
1898. Hampton, Rev. David Machardy, The Manse, Culross.
1903. Harris, Walter B., Tangier, Morocco.
1887. Harrison, John, Rockville, Napier Road.
1886. Hart, George, Procurator-Fiscal of Renfrewshire at Paisley.
1905. Harvey, William, 4 Gowrie Street, Dundee.
1874. Hay, J. T., Blackhall Castle, Banchory.
1865.*Hay, Robert J. A., Florence.
1895. Heiton, Andrew Granger, Architect, Perth.
1902. Henderson, Adam, M.A., 26 Carnegie Street, Dumfries.
1889.*Henderson, James Stewart, 1 Pond Street, Hampstead, London, N.W.
1886. Henry, David, Architect, Estherville, Hepburn Gardens, St Andrews.
1901. Herries, The Right Hon. Lord, Everingham Park, York.
1891. Herries, Major William D., yr. of Spottes, Dalbeattie.
1897. Hewat, Rev. Kirkwood, M.A., North Manse, Prestwick, Ayrshire.
1887. Hewison, Rev. J. King, M.A., D.D., The Manse, Rothesay.
1896. Higgin, J. Walter, Benvoulin, Oban.
1881. Hill, George W., 6 Princes Terrace, Dowanhill, Glasgow.
1904. Holden, Lieut.-Col. Robert Mackenzie, 4th Bn. The Cameronians, United Service Club, London.
1877.*Home-Drummond, Col. H. S., of Blair Drummond, Stirling.
1874.*Hope, Henry W., of Luffness, Aberlady.
1896. Horsburgh, James, 21 Campden Hill Gardens, Kensington, London.
1904. Horton-Smith, Lionel Graham Horton, Barrister-at-Law, M.A. Cambridge, Lieut. London Scottish R.V., 53 Queen's Gardens, Lancaster Gate, and Athenæum Club, London.
1901. Houldsworth, Sir William Henry, Bart., Coodham, Kilmarnock.
1892. Houston, Rev. A. M'Neill, M.A., B.D., The Manse, Auchterderran, Cardenden, Fife.
1899. Howatt, Henry R., Brantwood, Corrour Road, Newlands, Glasgow.
1889.*Howden, Charles R. A., Advocate, 25 Melville Street.
1886. Howden, John M., C.A., 11 Eton Terrace.
1861.*Howe, Alexander, W.S., 17 Moray Place.
1872.*Hunter, Col. C. Hughes, Pläs Cöch, Llanfair P.G., Anglesea.
1891. Hunter, Rev. James, Fala Manse, Blackshiels.

1898. Hunter, Thomas, W.S., Town Clerk of Edinburgh, Inverarbour, 54 Inverleith Place.
1882. Hutcheson, Alexander, Architect, Herschel House, Broughty Ferry.
1895. Hutchison, James T., of Moreland, 12 Douglas Crescent.
1871.*Hutchison, John, R.S.A., 19 Manor Place.

1899. Imrie, Rev. David, St Andrew's U.F Church, Dunfermline.
1891. Inglis, Alexander Wood, Secretary, Board of Manufactures, 30 Abercromby Place.
1904. Inglis, Francis Caird, Rock House, Calton Hill.
1887. Inglis, Rev. W. Mason, M.A., Auchterhouse.

1901. Jackson, Richard C., c/o C. A. Bradley, Esq., 39 Garthland Drive, Glasgow.
1871.*Jamieson, James Auldjo, W.S., 14 Buckingham Terrace.
1902.*Johnston, Alfred Wintle, Architect, 59 Oakley Street, Chelsea, London.
1892. Johnston, David, 24 Huntly Gardens, Kelvinside, Glasgow.
1905. Johnston, C. N., K.C., Sheriff of Inverness, Elgin, and Nairn, 4 Heriot Row.
1900. Johnston, William, C.B., M.D., Colonel (retired), Army Medical Staff, of Newton Dee, Murtle.
1903. Johnstone, Rev. David, Minister of Quarff, Shetland.
1892. Johnstone, Henry, M.A. Oxon. (Edinburgh Academy), 69 Northumberland Street.
1898. Jonas, Alfred Charles, Uch Cae, Melfort Road, Thornton Heath, Surrey.

1893. Kaye, Walter Jenkinson, B.A., Pembroke College, Harrogate.
1870.*Keltie, John S., LL.D., Secretary, Royal Geographical Society. 1 St John's Wood Park, London, N.W.
1880.*Kennedy, John, M.A., 25 Abingdon Street, Westminster.
1889.*Kermode, Philip M. C., Advocate, Claughbane, Ramsey, Isle of Man.
1889. Kerr, Andrew William, Royal Bank House, St Andrew Square.
1896. Kerr, Henry F., A.R.I.B.A., 62 Hanover Street.
1905. Kerr, Robert, 17 Cornwall Street.
1878. King, Sir James, Bart., LL.D., 115 Wellington Road, Glasgow.
1884. Kinloch, Sir John G. S., Bart., Kinloch House, Meigle.
1892. Kinross, John, Architect, R.S.A., Seven Gables, 33 Mortonhall Road.
1900.*Kintore, The Right Hon. The Earl of, G.C.M.G., LL.D., Keith Hall, Inverurie.
1896. Kirkpatrick, John G., W.S., 32 Morningside Park, Edinburgh.
1906. Knowles, William Henry, F.S.A., Little Bridge, Gosforth, Newcastle-on-Tyne.

1903. Laidlaw, Walter, Abbey Cottage, Jedburgh.
1890. Laing, James H. W., M.A., B.Sc., M.B., C.M., 9 Tay Square, Dundee.
1899. Lamb, James, Leabrae, Inverary Terrace, Dundee.
1901. Lamington, The Right Hon. Lord, G.C.M.G., Lamington House, Lamington.
1901.*Lamont, Norman, M.P., of Knockdow, Toward, Argyleshire.
1900. Lang, Andrew, M.A., LL.D., D.C.L., 1 Marloes Road, Kensington, London.
1892.*Lang, James, 9 Crown Gardens, Dowanhill, Glasgow.
1893. Langwill, Robert B., 7 St Leonard's Bank, Perth.

1882. *Leadbetter, Thomas Greenshields, Architect, Swinton House, Coldstream.
1904. Leitch, Colin, Ardrishaig.
1884. *Lennox, James, Eden Bank, Dumfries.
1857. *Leslie, Charles Stephen, of Balquhain, 11 Chanonry, Aberdeen.
1902. *Leveson-Gower, F. S., M.P., Berkeley House, Berkeley Square, London.
1890. Lindsay, Leonard C., 23 Belgrave Road, London.
1873. *Lindsay, Rev. Thomas M., D.D., Professor of Divinity, U.F. Church College, Glasgow.
1892. Linton, Simon, Oakwood, Selkirk.
1881. *Little, Robert, Ardenlea, Northwood, Middlesex.
1898. Livingstone, Duncan Paul, Newbank, Giffnock.
1901. Livingstone, Matthew, 32 Hermitage Gardens.
1904. Lockhart, Sir Simon Macdonald, Bart. of Lee and Carnwarth, The Lee, Lanark.
1901. Loney, John W. M., 6 Carlton Street.
1882. Lorimer, George, Durrisdeer, Gilsland Road.
1905. Low, Edward Bruce, M.A., B.L., S.S.C., 6 Gordon Terrace.
1899. Low, Rev. George Duncan, M.A., 61 Morningside Drive.
1902. Low, George M., Actuary, 11 Moray Place.
1903. Lowe, D. F., M.A., LL.D., Headmaster, George Heriot's School, Lauriston Place.
1904. Lowson, George, LL.D., Rector of the High School, 14 Park Place, Stirling.
1873. *Lumsden, Lt.-Col. Henry William, Langley Park, Montrose.
1873. *Lumsden, Hugh Gordon, of Clova, Lumsden, Aberdeenshire.
1880. *Lumsden, James, Arden House, Arden, Dumbartonshire.
1905. Lusk, David Colville, Southdean, Colinton Road.
1906. Lyle, James, Waverley, Queen's Crescent.
1893. Lynn, Francis, Livingstone Terrace, Galashiels.

1892. Macadam, Joseph H., 38 Shoe Lane, London.
1885. M'Bain, James M., Banker, Arbroath.
1893. MacBrayne, David, Auchintiel, Helensburgh.
1904. MacBride, MacKenzie, Pleydell House, Pleydell Court, Fleet Street, London.
1904. Macdonald, Charles, Dunglas Castle, Bowling.
1885. Macdonald, Coll Reginald, M.D., Ardantrae, Ayr.
1900. Macdonald, George, M.A., LL.D., 17 North Learmonth Gardens,—*Curator of Coins.*
1899. Macdonald, James, 3 Dundas Street.
1879. Macdonald, James, W.S., 21 Thistle Street.
1890. *Macdonald, John Matheson, 95 Harley Street, London, W.
1882. Macdonald, Kenneth, Town Clerk of Inverness.
1890. Macdonald, William Rae, Neidpath, Wester Coates Avenue.
1896. Macdougall, James Patten, C.B., Vice-President of the Local Government Board for Scotland, 39 Heriot Row, and Gallanach, Oban.
1872. *M'Dowall, Thomas W., M.D., East Cottingwood, Morpeth.
1860. Macewen, John Cochrane, Trafford Bank, Inverness.
1892. M'Ewen, Rev. John, Dyke, Forres.
1903. M'Ewen, W. C., M.A., W.S., 9 Douglas Crescent.
1899. Macfarlane-Grieve, W. A., M.A. and S.C.L. Oxon., M.A. Cantab., Impington Park, Cambridgeshire.
1902. M'Gilchrist, Charles R. B., 14 Westminster Road, Liscard, Cheshire.

1898. M'Gillivray, Angus, C.M., M.D., 23 Tay Street, Dundee.
1878. Macgillivray, William, W.S., 32 Charlotte Square.
1901. MacGregor, Alasdair R., of Macgregor, Edinchip, Lochearnhead.
1889. M'Hardy, Lt.-Col. A. B., C.B., 3 Ravelston Park, — *Vice-President.*
1906. M'Innes, John A., M.A., F.E.I.S., Laurelbank, Leven, Fife.
1898. MacIntosh, Rev. Charles Douglas, M.A., Minister of St Oran's Church, Connel, Argyllshire.
1897.*Macintyre, P. M., Advocate, 12 India Street.
1876.*Mackay, Æneas J. G., LL.D., K.C., 7 Albyn Place.
1903. Mackay, George G., Ardlui, New Brighton, Cheshire.
1890. Mackay, James, Seend Manor, Melksham, Wilts.
1888. Mackay, J. F., W.S., Whitehouse, Cramond Bridge, Midlothian.
1897. Mackay, John S., LL.D., 69 Northumberland Street.
1892. Mackay, Thomas A., 22 Clarence Street.
1882. Mackay, William, Solicitor, Inverness.
1899. Mackenzie, Sir Alexander Muir, Bart., of Delvine, Murthly.
1887. Mackenzie, David J., Sheriff-Substitute, Crookedholm House, Hurlford, Ayrshire.
1906. Mackenzie, Evan N. Burton, yr. of Kilcoy, Kilcoy Castle, Killearnan, Ross-shire.
1891.*Mackenzie, James, 2 Rillbank Crescent.
1872.*Mackenzie, Rev. James B., Kenmore, Aberfeldy.
1900. Mackenzie, Sir Kenneth J., Bart., King's and Lord Treasurer's Remembrancer, 10 Moray Place.
1882. Mackenzie, R. W. R., Stormontfield, Perth.
1870.*Mackenzie, Thomas, Sheriff-Substitute, Tain.
1904. Mackenzie, William Cook, Lutha Selborne Road, Sidcup, Kent.
1904. Mackenzie, W. M., M.A., 7 Dryburgh Gardens, Kelvinside, Glasgow.
1876. M'Kie, Thomas, Advocate, 30 Moray Place.
1901. M'Killop, James, jun., Polmont Park, Polmont.
1888.*Mackinlay, J. M., M.A., The Lee, 18 Colinton Road, Merchiston.
1893. Mackintosh, William Fyfe, Town Chamberlain, 107 High St., Arbroath.
1878. Maclagan, Robert Craig, M.D., 5 Coates Crescent.
1903. M'Lauchlan, James J., F.F.A., 19 Coates Gardens.
1896. MacLean, J. A., Union Bank House, Forfar.
1903. M'Lean, Rev. John, Minister of Grantully, Pitilie, Aberfeldy.
1885.*MacLehose, James J., M.A., 61 St Vincent Street, Glasgow.
1893. Macleod, John N., of Kintarbert, Glensadell, Argyllshire.
1890.*Macleod, Sir Reginald, K.C.B., Under-Secretary for Scotland, 50 Draycott Place, London, S.W
1889. MacLuckie, John Reddoch, Braeside, Falkirk.
1875. Macmath, William, 16 St Andrew Square.
1905 cmillan, H. P., Advocate, 12 Nelson Street.
1882. Macphail, Rev. J. C., D.D., Harlaw Hill House, Prestonpans.
1886. Macpherson, Archibald, Architect, 7 Young Street.
1878. Macpherson, Norman, LL.D., 6 Buckingham Terrace.
1882.*MacRitchie, David, C.A., 4 Archibald Place.
1896. Malloch, James, M.A., Dudhope Villa, Dundee.
1899. Mann, John, C.A., Hillside, Bridge of Weir.
1901. Mann, Ludovic M'Lellan, Garth, Bridge of Weir.
1906. Marshall, Henry B., of Rachan, Broughton, Peeblesshire.

1885. Marshall, William Hunter, of Callander, Perthshire.
1891. Martin, Francis, 207 Bath Street, Glasgow.
1902. Martin, F. J., W.S., 17 Rothesay Pl.
1861.*Marwick, Sir James David, LL.D., 19 Woodside Terrace, Glasgow.
1886. Masson, David, LL.D., Historiographer for Scotland, 2 Lockharton Gardens.
1892. Matheson, Augustus A., M.D., 41 George Square.
1884. Maxwell, Right Hon. Sir Herbert Eustace, Bart., LL.D., of Monreith, Wigtownshire,—*President.*
1892.*Maxwell, Sir John Stirling, Bart., of Pollok, Pollok House, Pollokshaws.
1887.*Maxwell, William, of Donavourd, Pitlochry.
1904. May, Thomas, F.E.I.S., Lonmay, Lower Walton, Warrington.
1887. Meldrum, Rev. A., M.A., Logierait, Ballinluig.
1901. Menmuir, Charles, M.A., Rutherford College, Newcastle-on-Tyne.
1900. Menzies, W. D. G., of Pitcur, Hallyburton House, Coupar Angus.
1878. Mercer, Major William Lindsay, of Huntingtower, Perth.
1885. Metcalfe, Rev. W. M., D.D., South Manse, Paisley.
1882. Millar, Alexander H., Rosslynn House, Clepington Road, Dundee.
1876. Millar, William White, S.S.C., Dunesk, Lasswade, and 16 Regent Terrace.
1896. Miller, Alexander C., M.D., Craig Linnhe, Fort-William.
1898. Miller, Rev. Edward, M.A., The Manse, Bishopton, Renfrewshire.
1878.*Miller, George Anderson, W.S., Knowehead, Perth.
1904. Miller, John Charles, Agent, Commercial Bank, 133 West George Street, Glasgow.
1906. Mitchell, Rev. Canon Anthony, M.A., B.D., Principal of the Theological College of the Episcopal Church in Scotland, Coates Hall, Edinburgh.
1867.*Mitchell, Sir Arthur, K.C.B., M.D., LL.D., 34 Drummond Place.
1888. Mitchell, Charles, C.E., 23 Hill Street.
1884. Mitchell, Hugh, Solicitor, Pitlochry.
1903. Mitchell, James, 14 Knowe Terrace, Pollokshields, Glasgow.
1886.*Mitchell, Richard Blunt, of Polmood, 17 Regent Terrace.
1890.*Mitchell, Sydney, Architect, 34 Drummond Place.
1882.*Mitchell-Thomson, Sir Mitchell, Bart., 6 Charlotte Square.
1906. Modi, Dr E. M., Sleater Road, Bombay, India.
1903. Moray, Anna, Countess Dowager of, Tarbat House, Kildary, Rossshire.
1882. Morris, James Archibald, Architect, Wellington Chambers, Ayr.
1882. Morrison, Hew, LL.D., Librarian, Edinburgh Public Library.
1887.*Moubray, John J., Naemoor, Rumbling Bridge.
1904. Mounsey, J. L., W.S., Professor of Conveyancing, University of Edinburgh, 24 Gleneairn Crescent.
1897. Moxon, Charles, 77 George Street.
1889. Muirhead, George, F.R.S.E., Commissioner for the Duke of Richmond and Gordon, Speybank, Fochabers.
1891. Munro, Alexander M., Accountant, Town House, Aberdeen.
1899. Munro-Ferguson, Ronald Craufurd, of Novar, M.P., Raith, Kirkcaldy.
1897. Munro, John, J.P., Dun Righ, Oban.
1879.*Munro, Robert, M.A., M.D., LL.D., Elmbank, Largs, Ayrshire.
1890.*Munro, Rev. W. M., Edgecliffe East, St Andrews.
1906. Murray, Andrew Edward, W.S., 7 Eton Terrace.
1878.*Murray, David, M.A., LL.D., 169 West George Street, Glasgow.

1899. MURRAY, JOHN LAMB, of Heavyside, Biggar.
1887. MURRAY, Sir JOHN, K.C.B., LL.D., D.C.L., Challenger Lodge, Wardie.
1884. MURRAY, PATRICK, W.S., 7 Eton Terrace.
1905. MURRAY, P. KEITH, W.S., 12 Lennox Street.

1905.*NAISMITH, WILLIAM W., C.A., 57 Hamilton Drive, Glasgow.
1896. NAPIER, THEODORE, 7 West Castle Road, Merchiston.
1891.*NEILSON, GEORGE, LL.D., Pitlochie, 11 Annfield Terrace, Partick Hill, Glasgow.
1905. NEISH, WILLIAM, of The Laws, Kingennie, Dundee.
1900. NEWLANDS, Right Hon. Lord, Mauldslie Castle, Carluke.
1905. NEWLANDS, GUSTAV A. V., 27 Great King Street.
1887. NEWTON, R. N. H., 3 Eglinton Cres.
1889. NICHOLSON, J. SHIELD, M.A., D.Sc., Professor of Political Economy, &c., 3 Belford Park.
1895. NISBETT, HAMILTON MORE, The Drum, Greenend, Mid-Lothian.
1877.*NIVEN, ALEXANDER T., C.A., 28 Fountainhall Road.
1895. NIXON, WILLIAM, Solicitor, 10 Whitehall Street, Dundee.
1891. NOBLE, ROBERT, Heronhill, Hawick.
1905. NORRIE, JAMES A., Craigtay, Ferry Road, Dundee.
1898. NOTMAN, JOHN, F.F.A., 176 Newhaven Road,—*Treasurer*.

1890. OGILVY, HENRY J. NISBET-HAMILTON, Biel, Prestonkirk.
1904. OLDRIEVE, W. T., Principal Architect for Scotland, H.M. Office of Works, 11 Merchiston Gardens.
1896. ORMOND, Rev. DAVID D., Minister of Craig's U.F. Church, Stirling.
1901. OWER, CHARLES, Architect, Benora, Broughty Ferry.

1904. PANTER, Rev. CHARLES RICHARD, M.A., LL.D., Wickhampton Rectory, Acle, Norfolk.
1903. PARK, ALEXANDER, Ingleside, Lenzie.
1906. PATERSON, Miss OCTAVIA G., Ashmore, Helensburgh.
1898. PATON, ROBERT, City Chamberlain, 19 Regent Terrace.
1891. PATON, VICTOR ALBERT NOEL, W.S., 31 Melville Street.
1880. PATTERSON, JAMES K., Ph.D., LL.D., President of the State College of Kentucky, Lexington, U.S.A.
1871.*PAUL, GEORGE M., W.S., 16 St Andrew Square.
1879. PAUL, Sir J. BALFOUR, Advocate, Lyon King-of-Arms, 30 Heriot Row.
1882. PAUL, Rev. ROBERT, The West Manse, Dollar.
1902.*PAULIN, DAVID, F.F.A., 6 Forres Street.
1874.*PAXTON, WILLIAM, 62 Fountainhall Road.
1891. PEACE, THOMAS SMITH, Architect, King Street, Kirkwall.
1904. PEDDIE, ALEXANDER L. DICK, W.S., 7 Randolph Cliff.
1879. PEDDIE, J. M. DICK, Architect, 8 Albyn Place.
1904. PENTIN, Rev. HERBERT, M.A., Milton Abbey, Dorset.
1900. PHILLIPS, W. RICHARD, Architect, Westbourne Lodge, Goldhawk Road, Ravenscourt Park, London.
1892. PILLANS, HUGH HANDYSIDE, Royal Bank, Hunter Square.
1885.*PIRRIE, ROBERT, 9 Buckingham Terrace, Hillhead, Glasgow.
1905. PORTEOUS, WILLIAM SHERER, 3 Priestfield Road.
1901.*PORTLAND, His Grace The Duke of, K.G., Welbeck Abbey, Notts.

1905. Price, C. Rees, 163 Bath Street, Glasgow.
1900. Primrose, Rev. James, M.A., 27 Onslow Drive, Glasgow.

1865.*Rainy, Rev. Robert, D.D., Principal and Professor of Theology and Church History, U.F.C. College, Edinburgh, 8 Rosebery Crescent.
1906. Rait, Robert Sangster, Fellow of New College, Oxford.
1873.*Rampini, Charles, LL.D., Burnside, Torquay Road, Paignton, S. Devon.
1891. Ramsay, William, of Bowland, Stow.
1903. Rankin, Hugh F., Principal of the Anglo-Chinese College, Amoy.
1879. Rankine, John, K.C., M.A., LL.D., Professor of Scots Law, University of Edinburgh, 23 Ainslie Place.
1899. Rea, Alexander, B.A., B.L., M.R.A.S., Superintendent of the Archæological Survey of South India, Madras.
1901. Reid, Alan, F.E.I.S., The Loaning, Merchiston Bank Gardens.
1888.*Reid, Sir George, R.S.A., LL.D., 22 Royal Terrace.
1898. Reid, James Robert, 11 Magdala Crescent.
1897. Reid, Rev. Edward T. S., M.A., The Rectory, Hawick.
1905. Reid, William, 2 Bellefield Avenue, Magdalen Green, Dundee.
1891. Rhind, W. Birnie, R.S.A., Sculptor, St Helen's, Cambridge Street.
1880. Richardson, Adam B., 32 Palace Mansions, Kensington, London, W.
1896. Richardson, Ralph, W.S., 10 Magdala Place.
1905. Ridgway, Montagu Leighton, Architect, Hyrstcote, Dewsbury.
1886.*Ritchie, Charles, S.S.C., 20 Hill Street.
1902. Ritchie, G. Deans, Chapelgill, Broughton, Peeblesshire.
1902. Rivett-Carnac, Col. J. H., Château de Rougemont, Switzerland.
1898. Roberts, Alexander F., Thornfield, Selkirk.
1905. Roberts, John, C.M.G., Littlebourne House, Dunedin, New Zealand.
1901.*Roberts, Thomas J. S., of Drygrange, Melrose.
1879. Robertson, George, Keeper of the Abbey, Dunfermline.
1903. Robertson, Rev. John M., D.D., Minister of St Ninians, Stirling.
1886.*Robertson, Robert, Huntly House, Dollar.
1889. Robertson, Thomas S., Architect, Balmyle, Broughty Ferry.
1905. Robertson, W. G. Aitchison, M.D., D.Sc., F.R.C.P.E., 26 Minto Street.
1879.*Robertson, W. W., Architect, Wardie Bank, Boswell Road.
1880.*Robson, William, S.S.C., Marchholm, Gillsland Road.
1871.*Rollo, The Right Hon. Lord, Duncrub House, Dunning.
1905. Rollo, James A., Solicitor, Argyle House, Maryfield, Dundee.
1872.*Rosebery, The Right Hon. The Earl of, K.G., K.T., LL.D., Dalmeny Park.
1876. Ross, Alexander, LL.D., Architect, Queensgate Chambers, Inverness.
1881. Ross, Joseph Carne, M.D., 19 Palatine Road, Withington, Manchester.
1891. Ross, Thomas, Architect, 14 Saxe-Coburg Place.
1906. Russell, Rev. James C., D.D., 9 Coates Gardens.

1903.*Sayce, Rev. A. H., M.A., LL.D., D.D., Professor of Assyriology, Oxford, 8 Chalmers Crescent, Edinburgh,—*Foreign Secretary.*
1901. Scott, J. H. F. Kinnaird, of Gala, Gala House, Galashiels.
1892. Scott, James, J.P., Rock Knowe, Tayport.
1904. Scott, Rev. James Hay, The North Manse, Sanquhar.
1903. Scott, John, W.S., 13 Hill Street.

1900. Scott, Rev. Robert, M.A., Minister of Craig, Montrose.
1898. Scott-Hall, Rev. W. E., Oriel College, Oxford, and Plâs Llanfaelog, Anglesea.
1893. Scott-Moncrieff, Sir Colin, 11 Cheyne Walk, Chelsea, London.
1893. Scott-Moncrieff, David, W.S., 24 George Square.
1889. Scott-Moncrieff, W. G., Sheriff-Substitute, Edgemoor, Lanark.
1848.*Seton, George, M.A., Advocate, Ayton House, Abernethy, Perthshire.
1892. Shiells, Henry K., C.A., 141 George Street.
1897. Shiells, Robert, Banker, Neenah, Wisconsin, U.S.A.
1871.*Simpson, Alex. R., M.D., LL.D., 52 Queen Street.
1890. Simpson, H. F. Morland, M.A., Rector of the Grammar School, 80 Hamilton Place, Aberdeen.
1880.*Simpson, Robert R., W.S., 23 Douglas Crescent.
1904. Smeaton, Oliphant, 37 Mansion-house Road.
1898. Smellie, Thomas, Architect, Grange Place, Kilmarnock.
1902. Smith, A. Duncan, Advocate, 27 India Street.
1898. Smith, David Crawford, 19 Queen Street, Perth.
1892. Smith, G. Gregory, Professor of English Literature, Queen's College, Belfast.
1893. Smith, George, S.S.C., 21 St Andrew Square.
1898. Smith, Rev. James, M.A., B.D., Minister of St George's-in-the-West, 13 Albert Street, Aberdeen.
1874.*Smith, J. Irvine, 20 Great King Street.
1901. Smith, Mrs Lucy M., 6 Darnaway Street.
1889. Smith, Robert, Solicitor, 9 Ward Road, Dundee.
1902. Smith, William B., 34 Buchanan Street, Glasgow.
1902. Smith, W. C., M.A., LL.B., K.C., 6 Darnaway Street.
1892.*Smythe, Colonel David M., Methven Castle, Perth.
1892. Somerville, Rev. J. E., B.D., Villa Jeanne, Mentone, France.
1890.*Spence, Charles James, South Preston Lodge, North Shields.
1882. Sprague, Thomas B., M.A., LL.D., 29 Buckingham Terrace.
1903. Stark, Rev. William A., Minister of Kirkpatrick-Durham, Dalbeattie.
1875. Starke, James G. H., M.A., Advocate, Troqueer Holm, Dumfries.
1904. Steel, Rev. James, D.D., Vicar of Howorth, Newcastle-on-Tyne.
1891. Steele, William, Inland Revenue Office, Kelso.
1901. Steuart, A. Francis, Advocate, 79 Great King Street.
1902. Steuart, James, W.S., 10 Rothesay Terrace.
1895. Stevenson, John Horne, M.A., Advocate, 9 Oxford Terrace.
1867.*Stevenson, John J., Architect, 4 Porchester Gardens, London, W.
1904. Stevenson, Major-General T. R., C.B., of Sunnyside, Lanark.
1887. Stevenson, Rev. W., M.A., The Manse, Achtertool, Kirkcaldy.
1879. Stewart, Charles Poyntz, Chesfield Park, Stevenage.
1901. Stewart, Sir Hugh Shaw, Bart., Ardgowan, Greenock.
1871.*Stewart, Maj.-Gen. J. H. M. Shaw, R.E., 7 Inverness Terrace, London, W.
1901. Stewart, Sir Mark J. M'Taggart, Bart., Ardwell, Stranraer.
1885. Stewart, Robert King, Murdostoun Castle, Newmains, Lanarkshire.
1894. Stewart, Walter, 3 Queensferry Gardens.
1903. Stirling-Cookson, C. L., of Renton House, Berwickshire.
1882. Story, Rev. R. Herbert, D.D., LL.D., Principal of the University, Glasgow.
1897. Strachan, Rev. James M., B.D., Kilspindie Manse, Errol.

# LIST OF THE CORRESPONDING MEMBERS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND.

(*Elected since* 1851.)

1874.*Anderson, John, M.D., Curator of the Imperial Museum, Calcutta.
1866. Anderson, Joseph, Wick.
1876. Arnold, Thomas, Architect, London.
1865.*Barnwell, Rev. Edward L., Ruthin, Wales.
1865. Bell, Allan, of Abbot's Haugh.
1853.†Bruce, Rev. John Collingwood, M.A.
1900. Buchanan, Mungo, Falkirk.
1873.†Bugge, Sophus, Prof. of Icelandic, Royal University of Christiania.
1870. Carmichael, Alexander A., Lochmaddy, South Uist.
1875. Cleuiziou, M. Henri du, Commissioner for Public Monuments, Paris.
1892. Coles, Frederick R., Tongland, Kirkcudbright.
1868. Cooke, Edward William, R.A., London.
1857. Curry, Eugene, M.R.I.A., Dublin.
1874. Dalgarno, James, Slains, Aberdeenshire.
1888. Delorme, M. Emmanuel, Secretary of the Chamber of Commerce, Toulouse.
1864.*Dickson, Robert, L.R.C.S.E., Carnoustie.
1901.*Eeles, F. C., Munross, Stonehaven.
1851. Fenwick, John, Newcastle.
1878. Findlay, Col. the Hon. J. B., LL.D., D.C.L., Kittanning, Pennsylvania.
1892. Flavy, C. Barriere, Avocat, Toulouse.
1851. French, Gilbert J., Bolton.
1877. Galloway, William, Architect.
1864. Gauchard, M. Louis Prosper, Keeper of the Belgian Archives.
1873. Geekie, A. C., D.D., Bathurst, New South Wales.
1864. Gergerés, M. J. B., Keeper of the Library, Bordeaux.
1875. Gillespie, Rev. James E., Kirkgunzeon.
1865.†Greenwell, Rev. Canon W., Durham.
1866. Grierson, Thomas B., Surgeon, Thornhill, Dumfriesshire.
1864. Hagemans, Gustave, Brussels.
1889. Hairby, Captain Edward, F.R.C.S.
1876.*Hay, George, Arbroath.
1867. Herbst, Archivary, Copenhagen.
1865.*Irvine, James T., Architect.
1855. Jervise, Andrew, Brechin.
1860. Keller, Dr Ferdinand, Zurich.
1859. Klemming, G. R., Stockholm.
1877. Laing, Henry, Seal Engraver.
1889. Landsborough, Rev. David, LL.D., Minister of Henderson U.F. Church, Kilmarnock.

* Those marked with an asterisk subsequently became Fellows.
† These were subsequently made Honorary Members.

1859. Lappenberg, Dr J. M., Hamburg.
1877. Laurenson, Arthur, Lerwick.
1867. Lawson, Rev. Alexander, Creich, Fifeshire.
1861. Le Men, M., Archiviste du Département, Quimper, Finistère.
1864. Lorimer, Prof. Peter, D.D., London.
1877. Lyon, D. Murray, Ayr.
1904. Mackie, Alexander, Abernethy.
1890.*M'Lean, Rev. John, Grandtully, Aberfeldy.
1897. Macnaughton, Dr Allan, Taynuilt.
1879. Maillard, M. L'Abbé, Thorigne, Mayenne, France.
1867. Mapleton, Rev. R. J., M.A., Kilmartin, Argyleshire.
1876. Mathewson, Allan, Dundee.
1872. Michie, Rev. J. G., A.M., Migvie, Aberdeenshire.
1865. Miller, David, Arbroath.
1861.*Mitchell, Arthur, M.D., Deputy-Commissioner in Lunacy.
1871. Morrison, Rev. James, Urquhart, Elginshire.
1885. Morsing, Carlos Alberto, C.E., Rio de Janeiro.
1863. Nichols, John Gough, London.
1865. Nicholson, James, Kirkcudbright.
1903. Ritchie, James. The Schoolhouse, Port Elphinstone, Inverurie.
1871. Russell, Rev. James, Walls, Shetland.
1873.†Rygh, Olaf, Prof. of Icelandic, Royal University of Christiania.
1873. Save, Dr Carl, Prof. of Icelandic in the University of Upsala.
1852. Scott, Allan N., Lieut., Madras Artillery.
1872. Shearer, Robert Innes, Thrumster, Caithness.
1906. Sinclair, John, St Ann's, 7 Queen's Crescent, Edinburgh.
1853. Smiles, John Finch, M.D.
1892. Sutherland, Dr A., Invergordon.
1860. Tait, George, Alnwick.
1885. Temple, Charles S., Cloister Seat, Udny, Aberdeenshire.
1874. Thomson, Robert, Shuna, Easdale, Argyll.
1868.*Traill, William, M.D., St Andrews.
1863. Troyon, M. Frédéric, Lausanne.
1857. Walker, Rev. Henry, Urquhart, Elgin.
1888. Watt, W. G. T., of Breckness, Orkney.
1864. Watts, Thomas, British Museum, London.
1865. Weale, W. H. James, of Bruges.
1857. Wilde, W. R., Royal Irish Academy, Dublin.
1872. Wilson, Rev. George, F.C. Manse, Glenluce, Wigtownshire.
1888. Wright, Rev. Alban H., Prof., Codrington College, Barbadoes.

# LIST OF HONORARY MEMBERS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND,

NOVEMBER 30, 1906.

[*According to the Laws, the number is limited to* TWENTY-FIVE.]

1874.

The Right Hon. Lord AVEBURY, LL.D., D.C.L., High Elms, Farnborough, Kent.

Sir JOHN EVANS, K.C.B., D.C.L., LL.D., &c., Britwell, Berkhamsted, Herts.

1879.

Rev. Canon WILLIAM GREENWELL, M.A., D.C.L., Durham.

1885.

Dr HANS HILDEBRAND, Royal Antiquary of Sweden.

Dr ERNEST CHANTRE, The Museum, Lyons.

1892.

WHITLEY STOKES, LL.D., C.S.I., 15 Grenville Place, Cornwall Gardens, London.

1892.

Professor Luigi Pigorini, Director of the Royal Archæological Museum, Rome.

Dr Henry C. Lea, 2000 Walnut Street, Philadelphia.

1897.

W. M. Flinders Petrie, D.C.L., LL.D., Edwards Professor of Egyptology in University College, London.

John Rhys, M.A., LL.D., Professor of Celtic, and Principal of Jesus College, Oxford.

Sir Francis Tress Barry, Bart., M.P., St Leonard's Hill, Windsor, and Keiss Castle, Keiss, Caithness.

Dr Sophus Muller, Secretary of the Royal Society of Northern Antiquaries, and Director of the National Museum, Copenhagen.

Dr Oscar Montelius, Professor at the National Museum, Stockholm.

1900.

Emile Cartailhac, 5 Rue de la Chaine, Toulouse.

F. Haverfield, M.A., LL.D., Christ Church, Oxford.

J. Romilly Allen, 28 Great Ormond Street, London.

Rev. S. Baring Gould, Lew Trenchard, North Devon.

Robert Burnard, Huccaby House, Princetown, S. Devon.

Charles W. Dymond, The Castle, Sawrey S.O., Lancashire.

# LIST OF THE LADY ASSOCIATES

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND,

NOVEMBER 30, 1906.

[*According to the Laws, the number is limited to* TWENTY-FIVE.]

1873.

The Baroness BURDETT COUTTS.

1874.

The Dowager Lady DUNBAR of Northfield, Duffus House, Elgin.

1888.

The Right Hon. The COUNTESS OF SELKIRK.

1890.

Mrs P. H. CHALMERS of Avochie.

1894.

5 Miss EMMA SWANN, Walton Manor, Oxford.

1895.

Miss H. J. M. Russell of Ashiestiel, Galashiels.
Miss Amy Frances Yule of Tarradale, Ross-shire.

1900.

Miss M. A. Murray, Edwards Library, University College, London.
9 Mrs E. S. Armitage, Westholm, Rawdon, Leeds.

# LIST OF SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

The Society of Antiquaries of London.
The Royal Society of Antiquaries of Ireland.
The Cambrian Archæological Association.
The Royal Archæological Institute of Great Britain and Ireland.
The British Archæological Association.
The Society of Architects, London.
The Architectural, Archæological, and Historic Society of Chester.
The Derbyshire Archæological and Natural History Association.
The Essex Archæological Society.
The Kent Archæological Society.
The Historic Society of Lancashire and Cheshire, Liverpool.
The Chester Archæological and Historic Society, Chester.
The Architectural Society of the Counties of Lincoln and Nottingham and Associated Societies.
The Society of Antiquaries of Newcastle-upon-Tyne.
The Somersetshire Archæological and Natural History Society.
The Surrey Archæological Society.
The Sussex Archæological Society.
The Geological Society of Edinburgh.
The Berwickshire Naturalists' Club.
The Anthropological Institute, London.
The Wiltshire Archæological Society.
The Royal Irish Academy.
The Bristol and Gloucestershire Archæological Society.
The Numismatic Society, London.
The Shropshire Archæological Society.

The Dumfriesshire Natural History and Antiquarian Society.
The Edinburgh Architectural Association.
The New Spalding Club, Aberdeen.
The Cambridge Antiquarian Society.
The Royal Historical Society, London.
The Literary and Scientific Society, The Museum, Elgin.
The Yorkshire Archæological Society, Leeds.
The Perthshire Natural History Society, Perth.
The Thoresby Society, Leeds.
The Buchan Field Club, Peterhead.
The Viking Club, London.
The Glasgow Archæological Society.

### Foreign Societies, &c.

The Royal Society of Northern Antiquaries, Copenhagen.
La Société Nationale des Antiquaires de France, Paris.
Antiquarische Gesellschaft, Zurich.
Verein von Alterthumsfreunde im Rheinlande, Bonn.
The Smithsonian Institution, Washington, U.S.A.
The Canadian Institute, Toronto.
The Museum, Bergen.
Foreningen til Norske Fortidsmindesmerkers Bevaring, Christiania.
The Royal Academy of History and Antiquities, Stockholm.
The Bureau of Ethnology, Washington.
The Peabody Museum, Cambridge, Mass., U.S.A.
Gesellschaft für Nützliche Forschungen, Trier.
Physic-Œkonomische Gesellschaft, Königsberg.
Berliner Gesellschaft für Anthropologie, Berlin.
Anthropologische Gesellschaft, Wien.
Société d'Archéologie de Bruxelles, Belgium.
Société des Bollandists, Bruxelles.
L'École d'Anthropologie, Paris.
Société Archéologique de Namur, Namur.
Reale Accademia dei Lincei, Rome.

Der Alterthumsgesellschaft Prussia, Königsberg.
Centralblatt für Anthropologie, Stettin.
Société Archéologique du Midi de la France, Toulouse.
L'Académie des Inscriptions et Belles Lettres, Paris.
La Commissione Archeologica Communale di Roma.
La Société D'Anthropologie de Paris.
La Musée Guimet, Paris.
La Société Archéologique du Department de Constantine, Algeria.
National Museum of Croatia, Zagreb, Austria-Hungary.
The Bosnisch-Herzegovinisch Landes-Museum, Sarajevo, Bosnia.
Bureau des Schweizerisches Landes-Museum, Zurich.
Nordiska Museet, Stockholm.
Museum of Northern Antiquities, The University, Christiania.
The Royal Bohemian Museum, Prague, Austria.
Societa Romana di Antropologia, Rome.
La Société d'Histoire et d'Archéologie de Gand, Belgium.
Kongelige Norske Videnskabers Selskab, Throndheim, Norway.
Historische und Antiquarische Gesellschaft in Basel, Germany.
La Société Finlandaise d'Archéologie, Helsingfors, Finland.
La Société d'Anthropologie de Lyon, France.
La Société des Antiquaires de l'Ouest, Poitiers, France.
Der Historischer Verein für Niedersachsen, Hanover, Germany.
Göteborg och Bohusläns Fornminnesförening, Stadsbiblioteket, Göteborg.
The Archæological Survey of India, Simla.
Verein für Nassauische Alterthumskunde, Wiesbaden, Germany.
The Provincial Museum, Toronto, Canada.

From the Publishers.

*The Antiquary* (Elliot Stock), London.
*The Reliquary and Illustrated Archæologist* (Bemrose & Sons), London.
*Portugalia*, Oporto, Portugal.

## Libraries, British.

Edinburgh Public Library, George IV. Bridge.
Scottish National Portrait Gallery Library.
Glasgow University Library.
Edinburgh University Library.
Aberdeen University Library.
St Andrews University Library.
The United Free Church College Library, Edinburgh.
The Signet Library, Edinburgh.
The Advocates Library, Edinburgh.
The British Museum Library, London.
The Bodleian Library, Oxford.
The University Library, Cambridge.
Trinity College Library, Dublin.
The Royal Library, Windsor.
The Liverpool Free Library, Liverpool.
The Athenæum Club Library, London.
The Ordnance Survey Library, Southampton.
Chetham's Library, Manchester.
The Library of the Public Record Office, London.
The Library, Victoria and Albert Museum, London

## Libraries, Foreign

The University Library, Christiania, Norway.
The University Library, Upsala, Sweden.
The Royal Library, Stockholm, Sweden.
The University Library, Kiel, Germany.
The University Library, Leipsic, Germany.
The Royal Library, Dresden, Germany.
The Royal Library, Berlin, Prussia.
The Imperial Library, Vienna, Austria.
The National Library, Paris, France.
The Public Library, Hamburg, Germany.
The University Library, Gottingen, Germany.
The Royal Library, Munich, Bavaria.
The Royal Library, Copenhagen, Denmark.

# PROCEEDINGS

OF THE

# SOCIETY OF ANTIQUARIES OF SCOTLAND.

## HUNDRED AND TWENTY-SIXTH SESSION, 1905–1906.

ANNIVERSARY MEETING, 30*th November* 1905.

THE RIGHT HON. SIR HERBERT MAXWELL, BART., LL.D., M.P., President, in the Chair.

Sir James Balfour Paul and George Neilson, LL.D., were appointed Scrutineers of the Ballot for the election of Office-Bearers and Councillors.

The Ballot having been concluded, the Scrutineers found and declared the List of the Council for the ensuing year to be as follows:—

*President.*

THE RIGHT HON. SIR HERBERT E. MAXWELL, BART., LL.D., M.P.

*Vice-Presidents.*

Lieut.-Col. A. B. M'HARDY, C.B.
The Right Hon. LORD BALCARRES.
DAVID CHRISTISON, M.D.

*Councillors.*

Sir Arthur Mitchell, K.C.B., M.D., LL.D., } *Representing the Board of Trustees.*
The Hon. Hew Hamilton Dalrymple, }
Sir Kenneth J. Mackenzie, Bart., *Representing the Treasury.*
Prof. G. Baldwin Brown.
Right Rev. John Dowden, D.D.
James Robert Reid.
Sir John Stirling Maxwell, Bart.
Sir George Douglas, Bart.
Hew Morrison, LL.D.
Thomas Ross.
J. D. G. Dalrymple.
J. Graham Callander.

*Secretaries.*

William K. Dickson. | Alex. O. Curle.

*For Foreign Correspondence.*

Prof. A. H. Sayce, M.A., LL.D., D.D. | J. Maitland Thomson, LL.D.

*Treasurer.*

John Notman, F.F.A., 28 St Andrew Square.

*Curators of the Museum.*

Rev. John Duns, D.D. | Alexander J. S. Brook.

*Curator of Coins.*

George Macdonald, M.A.

*Librarian.*

James Curle.

A Ballot having been taken, the following were duly elected Fellows:—

Robert Penrice Lee Booker, Eton College, Windsor.
Kenneth Cochrane, Newfaan, Galashiels.
Robert de Cardonnel Findlay of Easterhill, 14 Stafford Place, London.
Robert Kerr, 17 Cornwall Street.
Edward Bruce Low, M.A., B.L., S.S.C., 6 Gordon Terrace.
James Adam Norrie, Taybeach Cottage, Broughty Ferry.

John Roberts, C.M.G., Dunedin, New Zealand.
W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., 26 Minto Street.
James Alexander Rollo, Solicitor, Argyle House, Maryfield, Dundee.
Sir Robert Usher of Norton and Wells, Bart., 37 Drumsheugh Gardens.

The meeting resolved to record their sense of the loss the Society had sustained in the deaths of the following Members deceased since last Annual Meeting :—

*Lady Associate.*

| | Elected |
|---|---|
| Mrs Ramsay, Kildalton, Islay, | 1883 |

*Fellows.*

| | |
|---|---|
| Thomas Stuart Anderson, Barns o' Woodside, Newburgh, Fife, | 1865 |
| William Adair Atkinson, of Knockfarrie, Pitlochry, | 1886 |
| David Corsar, The Elms, Arbroath, | 1901 |
| George Lillie Craik, 2 West Halkin Street, London, | 1879 |
| Henry Griffith, Clifton Spa, Bristol, | 1889 |
| John Archibald Park, Eastwood, Dunkeld, | 1896 |
| Lieut.-Col. George Glas Sandeman, of Fonab, Pitlochry, | 1894 |
| Andrew Semple, M.D., Deputy Surgeon-General, 10 Forres Street, | 1881 |
| Sir John Sibbald, M.D., 13 Great King Street, | 1879 |
| James Small, 7 Bruntsfield Crescent, | 1879 |
| W. M'Combie Smith, Persie, Blairgowrie, | 1891 |
| The Right Hon. The Earl of Southesk, | 1882 |
| John Hunter Tait, Advocate, 43 Moray Place, | 1903 |
| Charles Tomlinson, Healey, Rochdale, | 1896 |

Dr Christison, Secretary, read the following Report on the progress and work of the Society during the past year :—

*The Roll of Membership.*—In the Report of 1902–3 it was shown that the average annual addition to the Roll, necessary to keep up our strength to about 700, was 36. In the following year our losses through deaths, resignations, and lapses were no less than 47 ; and as our recruits only numbered 29, the total number of Fellows was reduced from 706 to 688. Fortunately, last year the conditions were reversed: 39 new members were elected, and as our losses amounted only to 21 (14 from

deaths, 5 from resignations, and 2 from lapses), the number on the Roll again stands at 706.

*Publications.*—The thirty-ninth volume of *Proceedings*, of which an advance copy lies on the table, contains 33 papers; they may be divided into two classes, the first dealing mainly with the description of finds, excavations, buildings, etc.; the second—more literary in treatment—with historical, topographical, and similar subjects. No less than 29 of the papers belong to the first division, and they may be classed chronologically as Prehistoric (12); Protohistoric (9); Mediæval (5); Post-Reformation (3).

*Prehistoric subjects* have always predominated in our volumes, chiefly because the flow of finds to the Museum and elsewhere is almost continuous from that department, whereas from the others it is uncertain and intermittent.

In the *Protohistoric period* I include subjects belonging to the dawn of the written history of our country, when some feeble light was thrown on it by Roman authors and British and Irish chroniclers and annalists. The main strength of this department depends on excavations, chiefly those undertaken by the Society.

*The Mediæval papers* are descriptive of ancient buildings and architectural remains, but include the record of a find of coins.

The *Post-Reformation subjects* treat of Kirkyard Monuments and objects found in buildings of the period.

The *literary or historical and topographical division* contains only five papers. The workers in this department of our science are either relatively few, or do not often communicate their results to the Society. Possibly it is not generally known that in our Laws it is laid down that "the purpose of the Society shall be the promotion of

archæology, especially as connected with the investigation of the antiquities and *history* of Scotland, in its relation to archæology. Certainly such papers as we have been favoured with of late by Sir Arthur Mitchell, Bishop Dowden, and others might be multiplied with advantage in our *Proceedings*.

*Early Christian Monuments of Scotland.*—Ten copies of this standard work have been sold in the course of the year, making 324 in all; and 20 copies having been distributed gratis, 56 remain in stock, out of the original issue of 400.

*Excavations undertaken by the Society.*

A. *Roman Excavations.*—The excavation of *Rough Castle*, superintended by Mr Mungo Buchanan, was accomplished in 1903, but the Report was unavoidably delayed till last year, and will appear in the forthcoming volume. Separate copies will be distributed to all the subscribers to the Fund raised in 1903 for Roman excavations.

The excavation of *Barhill*, undertaken by Mr Alexander Whitelaw of Gartshore, the proprietor, and superintended by Mr Alexander Park, F.S.A. Scot., was described by Dr George Macdonald last session; but the unusual bulk and expense of the *Proceedings* for this year obliged us to postpone the publication of his Report till the subsequent volume.

*Newstead.*—It was stated in last year's Report that the Council hoped to be able to make some exploratory excavations at this acknowledged Roman site. This was done, and the results were so promising that it was resolved to solicit subscriptions for a thorough investigation of the place. The balance of the Fund for Roman excavations, amounting to £112, was devoted to the purpose, and, with some preliminary subscriptions, proved more than enough to defray the expenses during the present year; but, as the site turned out to be vastly larger than that of any of our previous undertakings, it was evident that at least another year's work, and a large addition to the available funds, were required, in order to do full justice to the investigation. A circular will therefore

be distributed, shortly, to persons likely to be interested in the work, and Mr Notman, our Treasurer, will be pleased to acknowledge any subscriptions, however small, from Fellows or others whom the circular may not reach. To all subscribers separate copies of the Reports, as they appear, will be sent. The Society is fortunate in having Mr James Curle to superintend the excavations, his residence in the immediate neighbourhood enabling him to keep a more constant watch over the work than has generally been possible in our former undertakings; and our experienced Clerk of Works, Mr Alexander Mackie, was reappointed to his old post.

B. *British Excavations.*—Under the Fund for this object, furnished by the Hon. John Abercromby, a considerable amount of work was accomplished.

Of a prehistoric kind were (1) the excavation of nondescript structures in Shetland and near Kinross, by Mr Abercromby and Dr Munro, with the result of discovering all that could be known of the facts that lay beneath the surface, although the origin and objects of the structures could not be satisfactorily made out.

(2) The results of Dr Thomas H. Bryce's excavations of a megalithic structure on the Holy Loch, and of a Mound near Biggar, marked "Tumulus" on the Ordnance map, were unfortunately so negative that he did not think it worth while to bring them before the Society. The mound has been called a mote, but he found it had none of the specific characters of a mote. The upper ten or twelve feet proved to be of forced earth, but the lower six or eight were the natural soil. Negative results, however, are not without their value.

(3) A larger investigation, protohistoric in kind, was accomplished in the excavation of four forts on the Poltalloch Estate, by permission of Colonel Malcolm, R.E., C.B. Of special interest were (1) the discovery that the supposed Broch at *Ardifuar* was not a broch, so that the southern limit of the known brochs of the West Highlands has to be withdrawn to the island of Lismore; (2) the proof obtained that at the vitrified

fort of *Duntroon* only the inner face had been vitrified, the outer face being of dry masonry, that only the stones of the place were used, and that no flux had been employed; these were all new and unexpected facts, but besides, the finds were such as to suggest that the "vitrified forts" might be anterior in date to the ordinary forts. (3) Of still greater interest were the results at Dunadd, the early capital of the Scots, the complicated fortifications of which were thoroughly traced, within which a great number and variety of relics were found, showing that the inhabitants used crucibles for melting bronze, numerous stone moulds for casting ingots and implements, compasses which aided them in drawing designs on stone, bronze pins, and bone pins and combs. These and other finds, particularly the great abundance of querns, proved that the fortress was no mere temporary refuge; and this other important fact was ascertained—namely, that the inhabitants did not dwell in *cytiau* or stone houses. Christian influence was also proved by the words *in nomine* neatly engraved in Irish-like minuscules, and by a cross-potent carved on a quern.

By these Poltalloch investigations a foundation has been laid for two important lines of inquiry:—First, is there really a class of "vitrified forts" of an earlier date than the ordinary hill forts? Secondly, do the large forts in Pictish Scotland in general, such as the White Caterthun, resemble the primitive capital of the Scots in structure and contents? We already know that the walls of Burghead and of the citadel at Abernethy differ in having logs of wood incorporated in the substance of the wall, as in the Gaulish forts described by Julius Cæsar. The same questions may also be put regarding Dundurn, the reputed capital of Fortrenn.

### *Museum and Library.*

(a) *Donations.*—The National Collection has been enriched in the past year by numerous donations. Although none were on the great scale of one or two that were chronicled in last Report, considerable collections of prehistoric articles were presented by Mr H. W. Seton-Kerr,

Wimbledon, Colonel J. P. Robertson, C.B., Callander, and Mr Joseph Downs, Irvine; and, supplementary to a previous gift, Mr Robert Christison of Lammermoor, Queensland, contributed a number of weapons and implements collected by himself from the native tribes in his neighbourhood.

A considerable number of books were also presented; but our special thanks are due to Dr Erskine Beveridge for his munificent gift of *The Dictionary of National Biography* in sixty-nine volumes.

(b) *Purchases.*—Although sadly crippled through the appropriation by the Treasury towards the acquisition of the "Queen Mary" Harp of more than half of the Annual Grant for the year, the Council have nevertheless effected several important purchases, including a large Bronze Caldron from Peeblesshire, and a Sepulchral Urn from Caithness, both recovered by the King's Remembrancer; a Collection of Flint Implements found at Bonchester, Hawick, and another from Torrs, Glenluce; and a Mediæval Jar from Lochmaben, interesting because there are so few specimens of mediæval pottery in the Museum.

*Report of the Departmental Committee upon the Board of Manufactures.*—The recommendation of this Committee "that an addition of £200 a year shall be made to the grant for maintenance" to the National Museum, was passed through Parliament, and has been given effect to by the Treasury. Its destination is to make a much-needed increase in the salaries of the Staff. Effect has not yet been given to the other recommendations in our favour, as they are mixed up with the proposed measures regarding the National Gallery, etc., which are still under consideration.

*Finally*, it is much to be regretted that every effort to induce the Treasury to withdraw the obnoxious conditions of the purchase of the "Queen Mary" Harp, whereby the Society is left almost entirely destitute of the means of adding to the National Collection and Library for the next two years, have failed. The Council, therefore, look more

than ever to the generosity of the Fellows, to make up by donations in some measure for the deficiency thus caused.

The Treasurer submitted a statement of the Society's funds, which was ordered to be printed and circulated among the Fellows.

The Secretary read the Annual Report to the Board of Trustees, as follows :—

Annual Report to the Board of Trustees for Manufactures in Scotland by the Society of Antiquaries of Scotland, with reference to the National Museum of Antiquities under their charge, for the year ending 30th September 1905 :—

During the year the Museum has been open to the public as formerly, and has been visited by 15,464 persons, of whom 1202 were visitors on pay days, and 14,262 on free days.

The number of objects of antiquity added to the Museum during the year has been 726 by donation and 66 by purchase ; and the number of volumes added to the Library has been 205 by donation and 25 by purchase.

Among the donations to the Museum may be mentioned a collection of 332 objects obtained in course of the excavation by the Society of the Forts of Dunadd and Duntroon, Argyleshire, presented with consent of the proprietor, Colonel E. W. Malcolm, C.B., of Poltalloch ; and a collection of 114 objects obtained from the excavation by the Society of the Roman Fort of Rough Castle, on the Antonine Wall, near Falkirk, presented with consent of the proprietors, Mr Forbes of Callander and the Very Rev. Dr J. C. Russell.

Among the donations to the Library may be mentioned a set of *The Dictionary of National Biography* (69 vols.), presented by Erskine Beveridge, LL.D., F.S.A. Scot., of Vallay and St Leonard's Hill, Dunfermline.

D. Christison, *Secretary.*

MONDAY, 11*th December* 1905.

LIEUT.-COL. A. B. M'HARDY, C.B., Vice-President, in the Chair.

A ballot having been taken,

MR HUGH DONALDSON, Camelon, Falkirk

was duly elected a Fellow of the Society.

The following purchases acquired by the Purchase Committee for the Museum and Library during the year ending 30th November 1905 were exhibited:—

Finger-ring of copper, the body of the ring flat and strap-shaped, a small ivory knob and a black button, found in digging a foundation at Liberton.

Snuff-horn made of a ram's horn, 11½ inches across the curve, with a hinged iron lid and iron mountings and chain, found under the hearth-stone of an old house in Gallowgate, Aberdeen.

Whorl of sandstone, scored on both sides with one concentric ring and twelve radiating lines, found at Delvine, Perthshire.

Fancy Box of wood, 7⅝ inches in length, 5 inches in breadth, and 1⅞ inches in depth, the interior divided into three compartments, and having a small mirror fixed on the inside of the lid, the exterior overlaid with designs and pictorial representations of houses, etc., executed in coloured straw, made by French prisoners in Edinburgh Castle.

Teetotum, inlaid with wood of the Fortingall Yew.

Bronze Spearhead, 4⅛ inches in length, with a flat loop on each side of the socket, ploughed up at Cauldshiels, East Lothian.

Five leaf-shaped Arrow-heads of flint; one Arrow-head with barbs and stem; one small Fabricator, 1¼ inches in length; one double-edged Saw, 1¾ inches in length, the edges slightly concave; five Scrapers

and two Flakes—all found in one field at Easter Balgillo, Tannadice, Forfarshire.

Flanged Axe of bronze, $6\frac{5}{8}$ inches in length by $2\frac{3}{4}$ inches in breadth over the cutting edge, with pronounced flanges and stop-ridges, found in digging a foundation near the Convalescent Home at Corstorphine.

Fig. 1. Bronze Axe or Palstave from the Caldonshill hoard. ($\frac{1}{2}$.)

Flanged Axe of bronze, $5\frac{1}{4}$ inches in length and $2\frac{1}{4}$ inches across the cutting face, with pronounced flanges and stop-ridges; and slightly flanged Axe, $4\frac{3}{4}$ inches in length, with narrow upper part, expanding to an almost semicircular cutting edge, $2\frac{1}{2}$ inches in breadth—both found in Aberdeenshire.

Five bronze Axes, of palstave form, considerably corroded on the surface, being part of a hoard of seven found in the beginning of June

1905, on the farm of Caldonshill, in the parish of Stoneykirk, Wigtownshire. They were found all together about a foot below a hedge which was being removed from the front of the farmhouse. Mr Blair, the farmer, did not at first recognise the importance of the find, having never seen bronze axes, and they were left lying about till the beginning of July, when others happened to see them and they were dispersed. One found its way to the National Museum in July, the other four were recovered by the King's Remembrancer, and two have not been traced. Three of the five in the Museum are of the variety having a rather narrow upper part with slight flanges, a side-loop, and an expanding lower part, with a prominent swelling or mid-rib tapering towards the cutting face. They are nearly the same size, about $6\frac{3}{4}$ inches in length by $2\frac{1}{2}$ inches across the cutting face. Only one (fig. 1) retains the side-loop, which seems to have failed in the casting, as it remains unperforated. The fourth axe is of the same variety, but has been broken, and only the lower part remains. The fifth is smaller in size, being only $5\frac{3}{4}$ inches in length by $2\frac{1}{8}$ inches in breadth across the cutting face, and has no loop at the side, but prominent wings, a well-developed stop-ridge, and no mid-rib.

Carved Panel of oak (fig. 2), 1 foot 11 inches in height by 10 inches in breadth, having in the upper part a figure of a horseman, bearded and looking backwards, and underneath two grotesque figures, and a female figure, nude, and holding in one hand a club upraised, and with the other grasping what seems to be the tail of a serpent. The panel is said to have been taken from the parish church when it was pulled down in 1811. It passed into the possession of the Fifeshire Antiquarian Society, from whom it has now been acquired for the National Museum through the good offices of Rev. James Campbell, D.D., F.S.A. Scot., Minister of Balmerino. The Society is also indebted to Rev. Dr Campbell for the use of the block from his *Balmerino and its Abbey: A Parish History* (new edition), 1899, published by W. Blackwood & Sons, Edinburgh. The panel is supposed to have come originally either from the Abbey of Balmerino, or from its chapel of St Ayle.

Fig. 2. Carved Panel of oak from Balmerino. (½)

Nine Communion Tokens, including Liberton, with the figure of the old church on reverse; Peterculter, 1787; Rothiemay (no date); Dunse, 1771; Carnwath, 1807; Kingussie, 1802; and three others.

Crown Half-Groat of James II., Aberdeen Mint—an unpublished example. It was found in the bank of the Burn of Balnaguard, in the parish of Grantully, by a man fishing there, and brought to the notice of the Society by Rev. John M'Lean, Grantully, F.S.A. Scot.

Index to the four volumes of General Pitt-Rivers's Excavations in Wiltshire, etc., 4to, 1905; The Burgh Records of Glasgow, vol. iii.; Rymer's Fœdera, Conventiones, etc. (London, 1727), 20 vols., folio; Dechelette's Vases Céramique de la Gaule Romaine, 2 vols.; Mortimer's Forty Years' Researches in the Burial Mounds of Yorkshire, 4to, 1905; Hampel's Alterthumer des fruhen Mittelalters in Ungarn, 3 vols., 4to, 1905.

The following Communications were read:—

## I.

## FORTS ON WHITCASTLE HILL, UPPER TEVIOTDALE; AND EARTHWORK ON FLANDERS MOSS, MENTEITH. By Dr D. CHRISTISON, Vice-President.

### I. Forts on Whitcastle Hill.

In Upper Teviotdale, 4 miles W.S.W. of Hawick, ½ mile N.E. of Easter Branxholm Loch, and 2 miles west of the junction of the Borthwick Water with the Teviot, stands this remarkable group of apparent earthworks. The former stream flows past 1 mile to the north, and the latter 1½ to the south, and the country between may be described as a ridgy tableland rising 400 to 500 feet above the streams, and about twice as much above the sea. The same character of the land, indeed, continues for a great distance, peaks such as the Eildons, Rubers Law, and ranges like the Cheviots, rising far off on the horizon like islands from a sea.

On the summit and at the east end of one of the little ridges of this tableland, 993 feet above the sea, commanding a most extensive view, the group is situated, and according to the large-scale Ordnance map the position is known as Whitcastle Hill, the name being printed close to the group, as if derived from it.

I had seen these works in a brief visit long ago, but, their fine preservation having recently attracted the attention of Miss Watson of Hassendeanburn, I was invited to go to them again last July, and, after a preliminary inspection, it was arranged by her that we should return with Mr Thomas Ross, and allow sufficient time for him to survey the group. The result is the plan (fig. 1), by help of which, with the sections, I trust that my description will be easily followed.

The group consists of five separate works, placed somewhat in two divisions, one of them with a rectangular and two curvilinear enclosures,

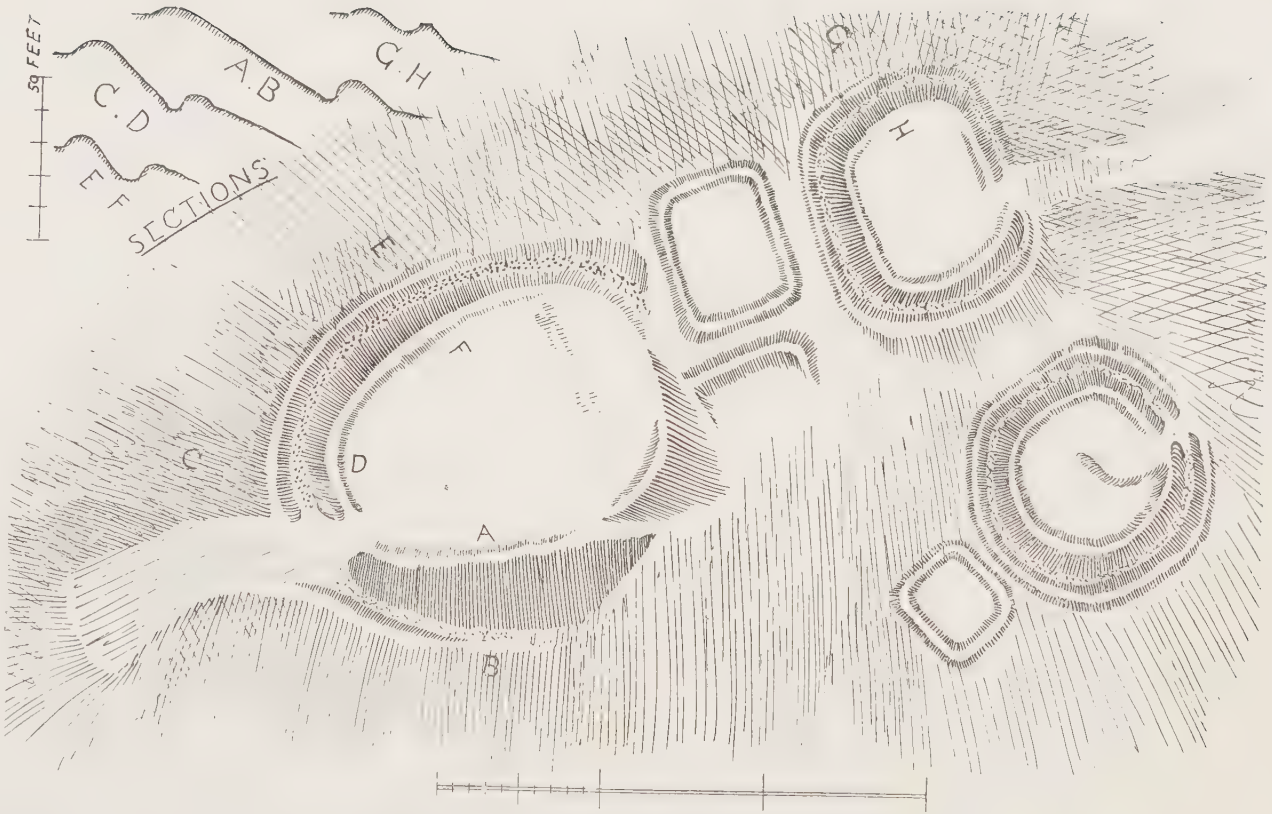



Fig. 1. Ground Plan of Earthworks on Whitcastle Hill.

the other with one of each kind. In each of these divisions the enclosures are close to each other without intercommunicating, and the two divisions are only about 40 feet apart at their nearest point.

*First Division.*

*The main fort* surrounds the nearly level summit of the ridge, and in form is a true oval, the east being much broader than the west end. At the ends and on the north side the ground falls away from the defences gently, but the slopes from the south side and south-west corner are pretty abrupt, and give considerable natural strength. The fortification has been effected by scarping these natural slopes, digging a trench all round at the foot, the spoil being thrown outwards to form an outer mound, and partly, perhaps, to make a rampart or parapet at the top. At the east end the defences are much damaged, but elsewhere they are well preserved.

*Dimensions.*—Over all, the length is about 270 feet and the breadth 250. Measuring from crest to crest of the rampart, the length of the interior is 205 feet, and the width, at the middle of the oval, 150 feet. In its present state the rampart is merely a slight mound a foot or two in height, merging too gradually inwards to be measured in width. The scarp is steep and high on the south side, and also on the north except that there it diminishes towards the ends, particularly at the east, where the slope of the ground is so gentle that the scarp must have depended on extra depth of the trench for its height; but here the rampart and trench are nearly levelled. From the nature of the ground, the trench varies much in depth and width, and to the south, in its present state, it almost becomes a terrace. The profiles (fig. 1) show that the perpendicular height of the scarp is above 20 feet at one point, and 12 to 13 at two others, and that the outer mound is comparatively trifling, rising only from 2 to 6 feet above the foot of the trench, even where well preserved.

The entrance is at the west end, and is no less than 27 feet wide where it emerges from the area, increasing to 40 feet when it passes the

trench, neither does it appear to have suffered change from the original plan. Preserving this width, there is a flattening of the descending ridge, ending in a level expansion 60 to 70 feet wide, which, viewed from the fort, has all the aspect of a traverse, though it loses much of this character on a closer inspection.

A roadway or path slants up from the east and enters the fort near the middle of the south side, but it may not be original.

*The oblong outwork* lies 120 feet E.N.E. from the main fort, upon the northern, gently-sloping side of the descending ridge. Hence its interior surface is not level, but inclines slightly to the north and east. Its form is oblong, with rounded ends and sides so slightly curved as to be nearly straight; and the long axis is directed towards the north. The dimensions over all are 180 by 135 feet, and interiorly, from crest to crest of the rampart, 105 by 80 feet. The fortifications, well preserved except to the east, consist of two ramparts with an intervening trench, and are wider and stronger on the south and west than on the north and south, probably because on the latter sides the ground falls away and renders them more strong by nature.

On the north side (Profile CD, fig. 1) the rampart is 6 feet 6 inches high, and the outer mound rises only 2 feet above the trench; the top of this mound is flat, and 2 to 3 feet wide; towards the interior the rampart is quite low. On the south side the rampart is 5 feet high on the inside, and 7 feet high above the trench; and the outer mound is even higher. The entrance is on the east side, near the south-east angle, and, though only 6 feet wide at present, was probably even less originally. A path or roadway runs a short distance eastward from it.

*The rectangular enclosure* is wedged in between the main fort and the oblong work. It is separated from the latter by a passage about 15 feet wide, but is connected with the damaged fortifications of the main fort at its east end. A single mound, 3 to 5 feet high, with slightly rounded angles, encloses a level area of 85 by 70 feet, from crest to crest. There is no trench. The long axis is parallel with that of the oblong work.

Separated from the south side of the rectangle, and parallel with it, a mound, 70 feet long, encroaching at its west end deeply into the ruined fortifications of the main fort, turns by a right angle at its east end, and runs southward for a short distance. This may be the remains of another rectangular enclosure. Within the main fort, and about 40 feet from its east end, another straight mound in a rather fragmentary condition runs across the interior. For about 70 feet it is fairly continuous, and if complete would be 130 feet long.

*Second Division.*

*Circular Outwork.*—This is situated about 150 feet east of the main fort and 40 feet south-east of the oblong work ; or, reckoning from their inner ramparts, 220 and 100 feet respectively. It is commanded by the main fort, but, short as the distance is from the oblong work, the one is barely visible from the other, owing to their being on opposite sides of the ridge. The shape is irregularly circular, the north-west side being nearly straight. The diameter over all is 150 feet, and internally, from crest to crest, 95 feet. The defences closely resemble those of the oblong outwork, and need not be separately described. The entrance is towards the north-east, and is 5 or 6 feet wide.

*Rectangular Enclosure.*—Almost in contact with the last on its south-west side is a small rectangle enclosed by a mound, but without a trench. It measures about 67 by 60 feet over all, and 55 by 50 from crest to crest of the mound, which is 3 to 5 feet high.

*Remarks.*

All the structures have the appearance of being earthworks, and I noticed very few stones on the ground, except those forming a small cairn at the top. But "Whitcastle," the name of the hill, suggests that the main fort, at least, may have been really a stone fort, just as we find "White" applied in the case of "the White Caterthun." A very slight excavation would probably determine this.

The three curvilinear works are evidently of a defensive character,

and there is no reason why they might not be contemporary; although it is very exceptional to find subsidiary works detached, and particularly so far detached from the main fort, as here. Indeed, the only other example I can recall of a detached work with a trench is not very far off, and in the same county, at Bonchester.

But the rectilinear works, with their slight proportions and want of trenches, seem to have been intended for indefensible enclosures, though for what precise purpose does not appear. The absence of entrances would seem to disqualify them from being cattle kraals; and even if cattle were got into them, the enclosing mounds do not seem sufficient to keep them there. Possibly they, and the straight mound near the east end of the interior of the main fort, may have had to do with the gardens or cultivated enclosures of a croft or summer shieling, which may have existed here in comparatively recent times. Certain it is that the rectangles were posterior in date to the main fort, as the principal one, and the fragment probably of another, encroach on the end of the fort and stand upon the ruins of its rampart and trench.

### *"The Clints" Fort.*

Upwards of 500 yards south-east of the group a fort is marked on the Ordnance map close to the public road, and "The Clints" is printed close to it.[1] It is about 180 feet lower than the group, or 820 feet above the sea. I saw it on my first visit, but have no note of its condition. On the Ordnance map it is drawn as a circle about 90 feet in diameter, with a simple mound remaining to the north, while the south half is represented by a dotted line, as if barely traceable, with a deep intake to the south-west.

### II. Earthwork on Flanders Moss, Menteith.

In Menteith and the Lennox primitive fortresses of any kind are so rare that a peculiar interest attaches to this example (fig. 2). It is situ-

[1] In Jameson's *Scottish Dictionary*, "Clint" is defined as (1) a hard or flinty rock (South of Scotland, Lothians); (2) any pretty large stone of a hard kind (South of Scotland): "Clints," limited to the shelves of a river (Clydesdale).

ated 2 miles east of the south-east corner of the Lake of Menteith, and half a mile east by north of Ballingrove farmhouse, close to the west side

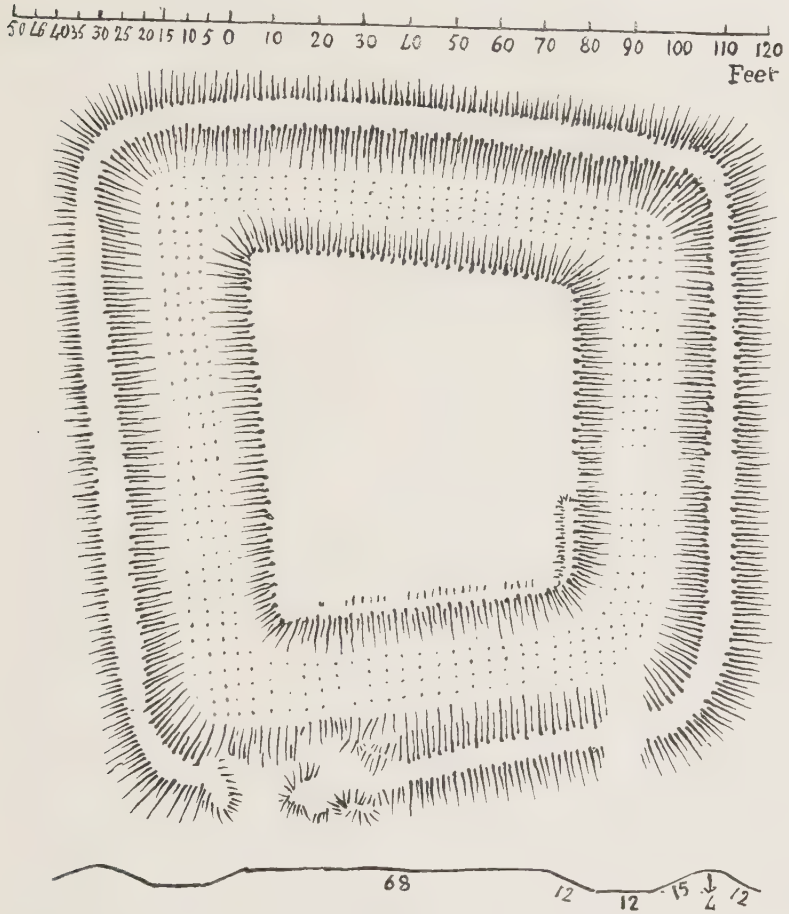



Fig. 2. Ground Plan of Earthwork in Flander Moss.

of the Flanders Moss, a great level bog about 2 miles square. The work stands on the bog, but very near the firm ground to the north-east, as

if the builders desired to have the protection of the bog, and at the same time to have a not too difficult access to the "redoubt." Although of low profile, it is conspicuous from its green colour, in contrast with the grey and brown of the bog.

The figure is quadrangular, but no one angle is a right one, as the sides have all different lengths, measuring along the top of the rampart 65, 67, 72, and 83 feet respectively. The slope of the scarp is about 12 feet long, and that of the counterscarp 14 feet; the trench is 12 feet wide, and 3 to 4 feet deep down to the present flat, boggy surface, but it was probably deeper when originally dug out.

The interior is level, and has no trace of a rampart on the north and west sides; but on the east a slight but well-preserved one runs northwards from the south-east angle for about 20 feet, and there are distinct enough remains of another along the south side.

The entrance has apparently been through the south-east angle of the outer mound, and so northward along the trench, flanked by the 20-feet rampart; but now the trench can be passed dry-shod only at a single point opposite the north end of the 20-feet rampart.

The dimensions over all are about 160 feet each way, and of the interior 75 by 70 feet. The origin of this work is obscure, but it is more probably late mediæval, or even post-Reformation, in date, than prehistoric.

## II.

## NOTICES OF (1) TWO STONE CISTS EACH CONTAINING TWO DRINKING-CUP URNS, ONE FROM PITTODRIE, IN THE PARISH OF OYNE, AND THE OTHER FROM WHITEHOUSE, IN THE PARISH OF SKENE; (2) A LATE-CELTIC HARNESS MOUNTING OF BRONZE FROM SHEEL-AGREEN, IN THE PARISH OF CULSALMOND; (3) A STONE MOULD FOR CASTING FLAT AXES AND BARS FOUND AT PITDOULZIE, IN THE PARISH OF AUCHTERLESS; AND (4) TWO STAR-SHAPED BEADS OF PORCELLANEOUS PASTE FROM ABERDEENSHIRE.

By J. GRAHAM CALLANDER, F.S.A. Scot.

### I. Two Stone Cists, each containing two Drinking-Cup Urns.

*The Pittodrie Cist.*—Some ten years ago the two cover-stones of a cist were exposed through a tree having been blown over in the woods immediately adjoining Pittodrie House, at the foot of Benachie, Aberdeenshire. The cist was placed on a small ridge steeper on the western than on the eastern side, running in a northerly and southerly direction; and the cist, if anything, was a little to the west of the summit. There are no signs of a cairn ever having been erected over the grave, which must have had only eight or ten inches of soil above the cover-stones before the tree grew over it. The exact spot where the cist was found is in the parish of Oyne, and lies directly north-east of Pittodrie mansion-house, about 103 yards due west of the dwelling-house on the home farm. The grave was exposed towards the end of the year, but it was not till the following spring that it was opened and examined. When the cover-stones were lifted, the cist was seen to be nearly full of water which had accumulated since its first exposure. After the water was baled out the grave was found to be half full of soil. An urn was found standing upright near the north-west corner of the cist under the smaller cover-stone, and it was removed complete. While clearing the soil out of the chamber another urn was discovered near the centre of the grave, but, as it was covered with earth, it was unfortunately broken by the spade before its presence was noticed. No other relics of man

were observed, and, after the cist had been emptied, the cover-stones were replaced in their original positions and the grave was covered up.

George Smith, Esq., of Pittodrie, the proprietor of the ground, having kindly granted me permission to re-examine the cist, I visited the site on 3rd January of this year, and had the cover-stones slightly raised. Owing to the south wall of the cist having collapsed, either when the tree was overturned or when the cist was first opened, and the opposite wall showing signs of giving way, I did not care to raise the stone further, for fear of destroying the structure altogether. I was thus unable to get the exact measurements of the different stones of which the cist had been built, but had to be content with ascertaining the orientation, and length, breadth, and depth of the chamber.

The western end of the grave was formed by a single slab, and the northern side by two slabs, all of the local red granite. These stones were nicely squared and fitted quite closely. Benachie granite weathers in such a way as to make it easily broken into slabs—indeed, many slabs are to be found on the hill—and so it would not be such a difficult matter to square the ends and sides of such blocks. The eastern end of the grave was formed by the solid rock, and the southern side partly by the rock and partly by much smaller stones than had been used on the opposite side. The chamber is 6 feet long, 2 feet 10 inches broad, and 1 foot 8 inches deep. The longer axis of the grave is 10° N. of E. and 10° S. of W. magnetic—almost exactly true E. and W., after allowing for the difference between magnetic and true north. The larger cover-stone, which covered the whole cist except a small part of the north-west corner, is roughly oblong in shape. It measures 6 feet at its greatest length, 3 feet at its greatest breadth, and it is from 8 to 10 inches in thickness; the smaller stone is about 15 inches in length and breadth, and 6 inches in thickness. These two stones, like the slabs in the cist, are of red Benachie granite.

Both urns are of the drinking-cup type. No. 1 (fig. 1), which was found in the north-west corner of the cist, and which was removed whole, has a long, almost straight lip, which contracts from the mouth

to the neck, a distance of $2\frac{1}{4}$ inches, it then bulges out for a distance of $1\frac{1}{2}$ inches, after which it tapers rapidly to the base, a distance of $3\frac{1}{4}$ inches. The height of the urn varies from $6\frac{7}{16}$ inches on the one side to 7 inches on the other; it measures $5\frac{3}{4}$ inches in diameter at the mouth, $5\frac{1}{4}$ inches at the neck, $5\frac{3}{4}$ inches at the bulge, and $3\frac{3}{4}$ inches at the base. The wall of the urn is $\frac{1}{4}$ inch and the base $\frac{1}{2}$ inch thick. The urn bears three parallel bands of ornamentation. The upper zone, which encircles the everted part, is composed of three straight lines, two zigzag lines, and six other straight lines which all go round the vessel. The angles of the two zigzag lines are not always exactly opposite, the lines of the lower zigzag being shorter than those of the upper zigzag. When they do happen to be opposite each other, they are usually about $1\frac{1}{4}$ and $\frac{7}{8}$ inch apart respectively, and the space between them is filled in with perpendicular straight lines, about seven to the inch, which gives this part somewhat the appearance of a band of irregular elongated hexagons impinging on each other. The other two zones of ornament are each composed of five parallel straight lines, rather more than $\frac{1}{8}$ inch apart, encircling the urn; the first is placed just under the bulge, and the second half-way between it and the base.

The other urn No. 2 (fig. 2) is taller and finer in its curves than No. 1, and it has a smoother and more glossy surface. The two urns are made of clay mixed with stones broken very small, but the material of the former is much the finer in texture. The profile of the wall of No. 1 is more angular than that of No. 2, which is composed of fine curves. The everted lip of No. 2 curves in to the neck, then bulges out to a little more than the diameter of the mouth, and finally curves in to the base. The height of the urn is $8\frac{1}{8}$ inches, the diameter at the mouth is $5\frac{3}{4}$ inches, at the neck $5\frac{1}{4}$ inches, at the bulge $6\frac{1}{8}$ inches, and at the base $3\frac{15}{16}$ inches. Its walls are $\frac{1}{4}$ inch in thickness, and the base, which is quite conical in the inside, is 1 inch thick at the centre. Like urn No. 1, it has three zones of ornamentation encircling it. These three zones are each bounded on the top and bottom edges by two parallel straight lines. The upper zone, which encircles the everted part, is com-

Fig. 1.

Fig. 2.

Urns from the Pittodrie Cist.

Fig. 3.

Fig. 4.

Urns from the Skene Cist.

Fig. 5.

Fig. 6.

Urns from Broomend Cist No. 1.

Fig. 7.

Fig. 8.

Urns from Broomend Cist No. 2.

posed of three narrow bands, each contained within two parallel straight lines. The first band is composed of straight lines, five or six to the inch, slanting to the left; the next, of perpendicular lines, nine to the inch; and the third, of lines, seven to the inch, slanting to the right. The middle zone which goes round the bulge is formed of vertical zigzags of three parts, six to the inch, which, commencing on a transverse straight line encircling the vessel, first slant to the right, then to the left, and then to the right again, when they end on another transverse straight line running parallel to, and at an average distance of $1\frac{3}{8}$ inches from the last transverse line. The lower zone is composed of crossed slanting lines, about eight to the inch, between two transverse parallel lines usually 1 inch apart.

The lines of ornament on both urns have been impressed on the soft, damp clay with the toothed or comb-like instruments which were so much used for this purpose during the Bronze Age. However, more care has been bestowed on the decoration of urn No. 2 than of urn No. 1. On the latter, the vertical lines of ornament filling up the space between the two zigzag lines, while often commencing exactly on the lower line, are usually carried across the upper one, often right up to the lip of the urn, the stamping tool apparently having been too long for this space. The same tool which was used to form the horizontal lines may also have been used to form the vertical lines. It is different in the case of the other urn. As the vertical and slanting lines of its three zones of ornament are of different lengths, and as they do not cross the transverse boundary lines, it is evident that a different stamping tool had been used for each length of line.

*The Skene Cist.*—A stone cist was discovered in the beginning of March of this year, while a farm-servant was removing gravel from a field on the farm of Whitehouse, in the parish of Skene, Aberdeenshire, about 10 miles south-east of Pittodrie. It was covered with 6 to 10 inches of mould. On being opened, the chamber was found to measure 3 feet 10 inches in length, 2 feet in breadth, and 1 foot 9 inches in depth, and its longer axis lay almost due east and west. The grave contained the

remains of a skeleton, two urns, three scrapers of flint, and some pieces of charcoal. The skeleton, which was that of an adult male, lay on its left side, with the skull at the east end of the cist. The short urn (fig. 3) was deposited on the south side of the cist, in front of the skeleton, and the tall urn (fig. 4) lay near the north-east corner, just touching the back of the skull. Both urns are of the drinking-cup type. The height of the first urn is $6\frac{1}{2}$ inches (165 mm.), the diameter of the mouth $6\frac{3}{32}$ inches (155 mm.), the diameter at the neck $5\frac{9}{32}$ inches (135 mm.), the diameter at the bulge $5\frac{15}{16}$ inches (150 mm.), and the diameter of the base $3\frac{5}{16}$ inches (84 mm.); the height of the second urn is 8 inches (203 mm.), the diameter of the mouth only $3\frac{5}{16}$ inches (84 mm.), the diameter at the neck $3\frac{3}{8}$ inches (86 mm.), the diameter at the bulge $3\frac{31}{32}$ inches (101 mm.), and the diameter of the base $2\frac{23}{32}$ inches (69 mm.). The first urn is of a common variety of the drinking-cup type, but the second is of a most uncommon, if not unique shape. Besides being very narrow in proportion to its height, it is almost cylindrical for a great part of its length; and while the great majority of drinking-cup urns have everted rims, this urn is rather wider at the neck than at the lip, and the bulge is only $\frac{1}{4}$ inch more in diameter than the neck.

The ornamentation of the shorter urn is divided into zones or bands encircling the vessel, by six groups of horizontal parallel lines. Just under the lip it is encircled by two lines, round the neck by five lines, just above the bulge by four lines, and between the bulge and the base by three groups of three lines each, nearly equidistant from each other, the lowest group being quite close to the base. The space between the first and second groups of these lines, which occupies the everted part of the vessel, is filled in with crossed oblique lines. The portion between the second and third groups of horizontal lines, which fills up the space between the neck and the bulge, is filled in with groups of parallel straight lines, ten or twelve in number; one group slants to the right, the next to the left, and so on, right round the vessel, leaving triangular spaces between each group, and each triangle in the reverse position of its neighbour. Only one of the three remaining divisions between the

bulge and the base, the middle one, between the fourth and fifth group of horizontal lines, is ornamented, the other two being plain. This part is occupied by two parallel lines of herring-bone pattern encircling the vessel. The ornamentation of the taller urn is finer and more striking. The entire space between the lip and the neck is covered by twenty-four horizontal parallel lines going round the urn, and eight similar lines encircle the part adjoining the base. Between these zones there are three bands of ornament similar to, and almost equidistant from each other, with the lower one placed in contact with the group of eight lines at the base. These three bands are each bounded on the top and bottom sides by three parallel transverse straight lines, which encircle the vessel. In contact with each of the inner boundary lines both above and below, as well as midway between them, is a row of small transverse lozenges or diamonds formed by short crossed lines, and the spaces between the three rows of lozenges are filled in with vertical lines.

The instruments used in the ornamentation of the urns have been a pointed tool to draw the lines on the shorter urn, and the toothed, comb-like stamp for impressing the design on the taller urn.

Professor Reid, of Aberdeen University, kindly furnished me with the details of the Skene burial and with photographs of the urns. A paper on the discovery was read by Dr Alex. Low, in July last, before the Anatomical and Anthropological Society of Aberdeen University, and it will appear in the coming volume of the *Proceedings* of that Society. The relics are preserved in Professor Reid's Museum at the Marischal College, Aberdeen.

The striking feature of the two burials is the finding of two drinking-cup urns in each of the graves. Cases of a plurality of drinking-cup urns being found in a single grave are not common, either in Scotland or in England. Of the twenty-four burials containing drinking-cup urns excavated by Canon Greenwell, only two contained more than one drinking-cup urn. In one of the graves in a barrow at Rudstone, East Riding, Yorkshire,[1] three drinking-cup urns and several skeletons were found, but the various interments had been made at different times. In the parish of Goodmanham, East Riding,[2] a grave in a barrow was found

[1] *British Barrows*, pp. 234–245. [2] *Ibid.*, p. 308.

to contain three such urns and two skeletons. An example of three drinking-cup urns which apparently were associated with one skeleton in the principal grave in a barrow on the Garrowby Wold, Yorkshire, is recorded.[1] In a note on p. 309 of *British Barrows*, Canon Greenwell quotes, from the *Transactions of the Berwickshire Naturalists' Club*, vol. iv. p. 428, pl. xiii., a case of three drinking-cup urns being found in a cist with the skeleton of a girl of about nine years of age, at North Sunderland, Northumberland.

To return to Scotland: two other graves besides the Pittodrie and Skene cists, each containing two drinking-cup urns, have been recorded, and these were also discovered in Aberdeenshire, nearly midway between Pittodrie and Skene, about forty years ago. Both were found 2 feet apart in a natural mound of sand and gravel, at Broomend, near Inverurie.[2] The first Broomend cist, like the one at Pittodrie, was of large size, while the second Broomend cist and the Skene example were nearer the average size of the regular Bronze Age short cist. It may be mentioned that a third and much smaller cist was found about 2 feet to the eastward of the second Broomend cist. It measured 16 inches in length, 13 inches average breadth, and 11 inches in depth. It contained the remains of a skeleton and a drinking-cup urn.

| | Pittodrie Cist. | Broomend Cists. | | Skene Cist. |
|---|---|---|---|---|
| | | No. 1. | No. 2. | |
| | ft. ins. | ft. ins. | ft. ins. | ft. ins. |
| Length | 6 0 | 5 3 | 4 2 | 3 10 |
| Breadth | 2 10 | 2 6 | 1 10 to 2 3 | 2 0 |
| Depth | 1 8 | 1 8 to 2 2 | 1 7 | 1 9 |

[1] J. R. Mortimer, *Forty Years' Researches in East Yorkshire*, p. 134, pl. xlii.

[2] *Proc. Soc. Ant. Scot.*, vol. vii. p. 110.

The first Broomend cist contained two unburnt, full-grown, male skeletons placed in a crouching position, with their heads at either end of the cist, also a ring of bone, and two drinking-cup urns (figs. 5 and 6), one behind each skull. The second Broomend cist also contained two unburnt skeletons, one an adult male, behind which was a drinking-cup (fig. 8), with the bowl of a horn spoon hanging over the rim, the other an infant female, behind which also was a smaller drinking-cup urn (fig. 7). It will be noticed that in the first Broomend cist the two urns were placed in corners of the grave behind the skulls of the skeletons. In the Skene cist one urn was placed in a corner behind the skull, and in the second Broomend cist one urn was placed in a corner beside the infant skeleton, while the other was deposited behind the back of the adult skeleton, about opposite to the top of the thighs. One of the Pittodrie urns was found in a corner of the grave. Unfortunately, it is impossible to say whether the Pittodrie grave contained one or more bodies, as nothing but the urns was observed when the cist was emptied; but its resemblance to the first Broomend cist, both as regards the very large size of the chamber and two drinking-cup urns being found in it, suggests that it may also have contained two bodies. Of course this is mere supposition, but it is difficult to understand why the grave was made so large if it were to contain only one body placed in the usual crouching position.

In none of these four cists were the two urns alike either as regards shape or ornamentation. Each of the four graves contained two distinct varieties of the drinking-cup urn. The taller urns (figs. 2, 6, and 8) from three of the cists have a fine-flowing curved line from the lip to the base, the everted rim curving out from the neck in a regular curve. The shorter urns (figs. 1, 5, and 7) from the same three cists are more angular at the neck, the everted brim springing out from the neck much more abruptly than in the taller urns. Of the two urns from the Skene grave, the tall one (fig. 4) is quite abnormal in shape, while the short one (fig. 3) can hardly be said specially to resemble either of the two varieties from the other three graves. Thus we find two

distinct varieties of drinking-cup urns represented in three of the graves, from which we are justified in believing that these two varieties were contemporary in this part of the country. These occurrences do not look like fortuitous cases of an earlier variety surviving, and to a certain extent overlapping a later variety. If only one example of two such urns had been discovered, it might have been suggested that it was either an overlap or that the second urn had been placed in the grave at a later period, but, when we have several similar occurrences, they must be explained in some other way. However, before anything can be said with certainty about chronologies, or why different varieties of the one class of urn were chosen for the different graves, a much greater mass of data must be collected. Apparently it was not simply a case of an urn to each skeleton, although this occurs in the two Broomend cists, for in the Skene cist there were two urns and one skeleton.

In the English examples cited we find similar testimony, though their evidence is not so clear as in the Scottish examples, owing to three of the four cases not having been stone-built cists, and also owing to their having been disturbed to receive secondary interments. The fourth example from North Sunderland, however, was a cist, and it contained three urns to one body.

## II. A Late Celtic Harness Mounting of Bronze found at Sheelagreen.

This object (figs. 9, 10) was found more than twenty years ago on the farm of Sheelagreen, in the parish of Culsalmond, Aberdeenshire. As it was picked up during farming operations, no other objects were found associated with it. It is in the form of a ring, which is hollow for the greater part. However, when it was being cast it apparently had been the intention of the founder to make it entirely hollow if possible, but parts of the upper and thinner portion have run solid, as can be seen at two places where there are small fractures in the ring. The exterior outline forms a regular oval, $3\frac{7}{16}$ inches by $2\frac{3}{4}$ inches in size. The interior lines of the ring commencing in the upper part curve in more

rapidly than those of the exterior, so as to form the divergent spiral, trumpet-like design which is the prevailing feature of the "Celtic art of the Pagan Period." On the under part of the ring (fig. 10) the regular, exterior curve of the object is interrupted by a slightly projecting, flat, oval collar or moulding, $1\frac{3}{4}$ inches by $\frac{15}{16}$ inch, in which there is an oval opening, $1\frac{3}{8}$ inches by $\frac{3}{4}$ inch, with a bar, $\frac{1}{4}$ inch broad, stretching lengthwise across it; this bar is part of the casting, herein differing from a similar ring found at Towie, Aberdeenshire, which apparently had had a bar or pin of iron fixed with lead to each side of the opening.

Fig. 9. Harness Mounting from Sheelagreen.

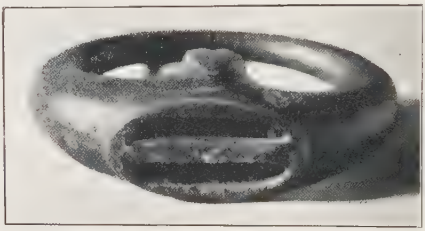


Fig. 10. Lower side of Harness Mounting.

The Sheelagreen specimen is finely patinated over nearly the whole of the surface, and is perfect but for two small holes broken in the upper and thinner part of the ring.

Harness mountings resembling this specimen, besides being found in Britain, have been found on the Continent. Dr Anderson has drawn my attention to Lindenschmit's *Alterthümer*, vol. i., part ii., plate v., Nos. 1 and 2, where portions of two pieces of horses' harness which have such mountings still attached to them, are figured. These objects are in the museum at Wiesbaden, and were found in Italy.

We have five specimens found in Scotland in our National Collection —one imperfect example from Kirriemuir, Forfarshire; another, locality

unknown, but probably Scottish; one from Clova, Aberdeenshire, formerly in the Sturrock Collection; and two from Hillockhead, Towie, Aberdeenshire. These last two examples were found in a cairn along with other bronze relics, which have been lost; amongst these was a bronze ring, 6 inches in diameter. A cist containing an urn and bones was also found in the cairn, but apparently the bronzes were not associated with it. A similar harness ring and several balls of shale, slightly flattened on one side, were found at Crichie, near Inverurie, Aberdeenshire, under a large stone.[1] The shale objects were about $1\frac{1}{4}$ inches in diameter, and in the centre of the flattened side there were still the remains of iron fastenings. Rev. John M'Ewan, F.S.A. Scot., Dyke, near Forres, has another harness mounting of the same type, which was found on the Culbin Sands, Morayshire. It is slightly imperfect, a piece of the thin portion of the ring having been broken or worn off. The Sheelagreen example is thus the eighth specimen of this special variety of harness-mountings recorded from Scotland.

### III. A Stone Mould for Casting Flat Bronze Axes and Bars found at Pitdoulzie.

This mould, which was found some years ago, during agricultural operations, on the farm of Pitdoulzie, in the parish of Auchterless, Aberdeenshire, like all the other recorded Scottish flat axe-moulds, was unfortunately not associated with any other object. It is made of grey sandstone, and is roughly rectangular in shape, with rounded corners, or it might be called a rectangular oval. It measures $11\frac{1}{2}$ inches in length, $6\frac{1}{4}$ inches in breadth, and from $2\frac{3}{4}$ to $3\frac{3}{4}$ inches in thickness. It is pretty much weathered, but seems to have borne five matrices. On the obverse the chief matrix is for a flat axe with expanding cutting edge; it measures $6\frac{3}{4}$ inches in length, $3\frac{3}{8}$ inches across the cutting face, $1\frac{3}{8}$ inches across the butt, and $\frac{5}{8}$ inch deep in the middle, getting shallower towards the butt and cutting ends. This matrix occupies the centre of the stone. Across the top and at right

[1] *Proc. Soc. Ant. Scot.*, vol. vii. p. 111.

angles to the main axis of the axe, at a distance of $\frac{9}{16}$ inch from the butt end of the axe, is a matrix for a bar $5\frac{1}{2}$ inches long, $\frac{1}{2}$ to $\frac{9}{16}$ inch broad, and $\frac{1}{4}$ inch deep. To the left of the axe matrix, and running parallel to its main axis, is a matrix for a bar $3\frac{1}{8}$ inches in length, $\frac{3}{8}$ inch in breadth, and $\frac{3}{16}$ inch in depth. Across the bottom, in front of the cutting edge of the axe, is what seems to have been the matrix for a smaller axe, but it is so much abraded and weathered as not to be quite distinguishable. On the reverse of the mould there is part of a matrix for a flat axe still clearly defined for a length of $4\frac{1}{2}$ inches. The breadth of the butt end is $1\frac{1}{2}$ inches, but, the whole of the other end of the matrix having been worn away, it is impossible to say what had been the original length of the matrix or the breadth of it at the cutting edge. Judging from the breadth of the butt end, and seeing that there was apparently only one matrix on this side of the stone, it is probable that it had been larger than the one on the obverse.

This is the eighth example of a flat axe-mould recorded from Scotland, and like the other seven, as pointed out in my paper to the Society two sessions ago, comes from the north-east part of the country. Not only is this so, but it was found in that particular district of Aberdeenshire and Banffshire which has already produced four specimens, and like three of these four it bears matrices for bars as well as for flat axes. It resembles other six of the Scottish flat axe-moulds in being made of the favourite material, sandstone.

### IV. Two Star-shaped Beads of Green Porcellaneous Paste from Aberdeenshire.

These two star-shaped beads were found a good many years ago in adjoining parishes in Aberdeenshire, and they are made of a vitreous, porcellaneous paste, much resembling the material used by the ancient Egyptians in the manufacture of beads and other small grave-goods.

The smaller example of the two was found on the farm of Darnabo, in the parish of Fyvie. It is in the shape of a star of six points, with a large hole in the centre. The points of the bead are not at quite so

regular intervals as to form a perfect circle. It is of a light green colour, and was picked up in a field during the working of the land.

The larger and finer example was found on the farm of Camalynes, in the parish of Auchterless. In colour it is a lightish green. The bead has six points placed at regular intervals, forming an almost perfect circle.

Unlike nearly all the other known Scottish prehistoric beads, this specimen was found directly associated with other remains, by which we are enabled to date it. A boy threw a stone at what he thought was the rounded edge of a boulder projecting from the side of a mill-lade. He got a fright when the supposed stone broke and a lot of bones fell out. Having run home and told his folk about it, they went and examined the place, and found this bead amongst the bones. Although none of the bones or fragments of the urn have been preserved, it is extremely likely that it was the remains of a cremation deposited in a cinerary urn, in which case the bead will date back at least to the end of the Bronze Age.

Professor Gowland, of the Royal College of Science, London, who analysed the material of one of three star-shaped beads in the collection of Mr Ludovic M'L. Mann, F.S.A. Scot., reported that it was "a crude enamel, coloured by copper."

With the exception of the one of six rays from Blair-Drummond Moss, Perthshire, star-shaped beads had hitherto been recorded only from the Glenluce Sands and the Culbin Sands, areas which, though far apart, have produced so much in common in the way of prehistoric remains. The recovery of these two beads from Aberdeenshire, goes to show that many of the smaller and more perishable prehistoric relics, such as bronze pins, small fibulæ, and various kinds of beads, which, as a rule, are found on, and which we are perhaps accustomed to associate with sandy areas like Glenluce, Shewalton, and Culbin Sands, have been in use, and common, all over the country. A small bronze or glass object has less chance of surviving intact, and of being discovered, on land that is continually being subjected to farming operations, than on sandy areas

like the places just named, where they lie undisturbed until the sand is removed from them, and they are exposed by the action of the wind.

Thirteen star-shaped beads have been recorded as found in Scotland : one of six points was found in Blair-Drummond Moss, Perthshire, and is in the collection of antiquities at Blair-Drummond ; three perfect having nine points (as fig. 11), one with five points, and two imperfect specimens from Glenluce Sands, and one imperfect example from the Culbin Sands, are in our Museum ; three from Glenluce, one of eight points being perfect, are in Mr Mann's collection ; and the two beads of six points just described.

Such beads, as mentioned by Mr Geo. F. Black, have been found in Ireland.[1] Mr W. J. Knowles, of Ballymena, informs me that star-

Fig. 11. Star-shaped Bead from Glenluce Sands in the Museum.

shaped beads, as well as flat beads of the same material, are termed quoit-beads by Irish archæologists. In a list of ancient Irish beads compiled in 1891 by Rev. Leonard Hassé, seven quoit-beads are mentioned, but how many were of the star pattern is not specified.[2] Three of the seven were in the collection of Mr Knowles, who has since received a fourth example : two of the four are star-shaped, and two are without points.

In England, two rings resembling the Irish quoit beads without rays, but provided with a loop on one side, have been recorded as found in barrows, in Sussex.[3] One of these is described as an "annular pendant

[1] *Proc. Soc. Ant. Scot.*, vol. xxv. p. 510.
[2] *Proc. Roy. Soc. Antiq. of Ireland*, vol. xxi. p. 361.
[3] Dr Thurnam in *Archæologia*, vol. xliii. p. 497, fig. 192.

or amulet of greenish porcelain, $1\frac{1}{8}$ inch in diameter, with loop for suspension. This ornament resembles in its texture Egyptian porcelain, and was found in an urn with burnt bones in a tumulus, in the Downs near Brighton."[1]

In recording such a varied list of prehistoric relics, I should like to draw the attention of the Society to the great number of rare and interesting antiquities which are hidden in private collections throughout the country, where their value to Scottish archæology is neither recognised nor appreciated. Some of these objects will probably come to the National Museum in time, but in many cases the circumstances of their discovery, even their provenance, will be lost at the death of their owners, as so few private collections are catalogued. Some years ago Dr Anderson and Mr Black visited the different Scottish museums, and recorded in our *Proceedings* the various antiquities contained in them—a very necessary work, when one considers the slipshod and careless fashion in which many of the curators of these museums care for, and catalogue their specimens. The Fellows of our Society might supplement that work by recording, in such a way that the object might afterwards be identified from their description, any fine or uncommon relic which they might happen to see in any private collection.

[1] Kemble, *Horæ Ferales*, p. 200, fig. 9.

## III.

## NOTICE OF THE DISCOVERY OF A STONE CIST, CONTAINING AN UNBURNT BURIAL AND AN URN OF THE DRINKING-CUP TYPE, AT WELLGROVE, LOCHEE, NEAR DUNDEE. By WILLIAM REID, F.S.A. Scot.

During the month of June 1904, while excavating to make a new road, prior to the erection of new buildings at Wellgrove, Lochee, near Dundee, a stone cist was discovered, containing unburnt bones and an urn of the drinking-cup type. As comparatively few discoveries of the kind have been made in this district of recent times, it may be of importance to place the particulars on record.

Wellgrove is a district to the south-west of Lochee, in the combined parishes of Liff and Benvie, distant some three miles from the Town Hall of Dundee, and quite close to Lochee West Station on the Caledonian Railway line between Dundee and Blairgowrie.

During the afternoon of 8th June, while workmen were engaged levelling down a grassy knoll in a meadow at a point 27 yards to the north from the centre of the South Road, they struck upon the lid or covering of a stone cist, $2\frac{1}{2}$ feet from the surface. Mr Charles Johnstone, who had the work in hand, was absent at the time of the discovery, whereupon the digging was discontinued at that point until instructions should be given as to how to proceed with the unearthing of the cist. At an early hour the following morning the lid of the cist was removed, which was found to be made up of three grey slabs of irregular form, varying from 1 inch to $2\frac{1}{2}$ inches in thickness, with no markings of any kind, and measured roughly $5\frac{1}{2}$ feet by 3 feet.

The depth from the surface to the bottom of the cist measured 5 feet, the soil being a shallow seam of black loam, then red and yellow sand above the rock, which is the Old Red Sandstone, splintered and much decayed.

The cist itself was formed of seven rude, undressed slabs of grey

whinstone, 2 inches thick. It lay due east and west, and measured 3 feet 10 inches long by 2 feet broad and $2\frac{1}{2}$ feet deep, and was partly filled with a fine red sand similar to the soil around it. The stones were laid aside for some days, and ultimately broken up by the workmen to make a road bed.

The cist was by no means air- or water-tight; the large bones found

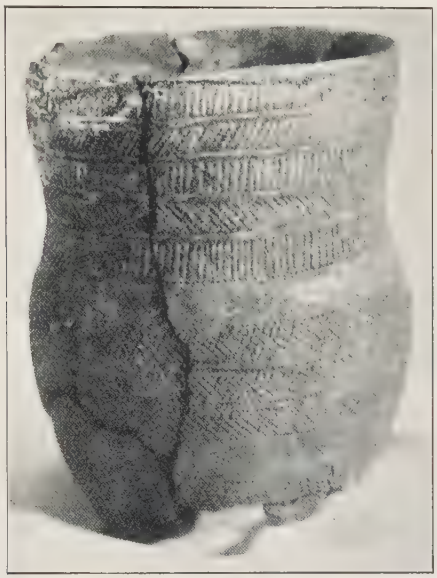


Fig. 1. Urn of Drinking-cup type found in the Cist at Wellgrove. ($\frac{1}{3}$.)

were very much decayed, and crumbled down when touched. There was no appearance of a skull, but the jawbone was noticed to contain seven teeth. Only one of these teeth has been preserved. It is an upper bicuspid, not very much worn, and probably belonged to a young person.

The urn (fig. 1) is of red burnt clay, $\frac{1}{4}$ inch thick, fairly regular in form and well fired; in its present broken condition it measures $6\frac{1}{2}$ inches high by $5\frac{1}{2}$ inches wide. When first discovered it was intact and filled with

finely-powdered red sand, and had at least measured 7½ or 8 inches high. In their haste to ascertain the contents, the urn was handed from one workman to another, who surmised it to contain coins or other treasure, and when being emptied it was accidentally let fall to the ground and broken, the bottom being so much destroyed that it was found impossible to piece it together. The broken parts, being very much splintered, were unfortunately not preserved.

The meadow through which the new road was made, and where the cist was discovered, has for 75 yards a sloping decline from south to north, where it meets the level, and extends for some distance north as pasture. The highest point of the meadow reaches the same level as the South Road, where for 32 yards it is continued east and west, at which distance from the new road it is cut by a stone wall, and presently forms the kitchen gardens to four cottages. This new road has opened up a serviceable thoroughfare between the South Road on the south, and Liff Road on the north, and since then has been named Wellburn Street.

Mr Charles Johnstone, contractor, Lochee, who retained possession of the urn since its discovery, has expressed a desire that it should be presented to the Museum, and on his behalf I have now the pleasure of making the presentation.

## IV.

## NOTICE OF A MAHOGANY PITCHPIPE FORMERLY USED IN CULTS PARISH CHURCH, FIFE.

By GEORGE LEITCH, M.A., Cults Schoolhouse, Ladybank.

This quaint instrument of music is an important relic of Scottish Church psalmody. It is of considerable age, and until recently was the property of a Pitlessie octogenarian, Mr James Speed, who bought it about the year 1845, at the sale of the goods and chattels of the Parish Church precentor. At that time there was a keen competition amongst the various Fife leaders of psalmody for the possession of what even then was considered an interesting memento of the past.

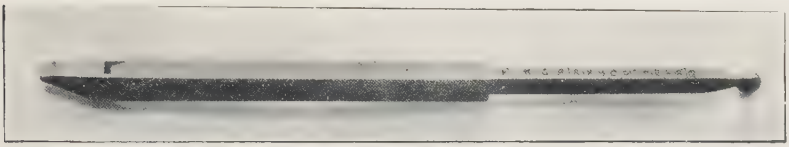


Fig. 1. Mahogany Pitchpipe formerly used in Cults Parish Church, Fife.

The instrument was shown to several nonagenarians, and one—Mr William Arthur of Monimail—pronounced it to be an old-fashioned pitchpipe, used at Cults, over a hundred years ago, to regulate the pitch or leading tone of the tune.

"In the Auld Kirk, in my younger days," said Mr Arthur, "there was neither choir nor organ. The musical service then was not a kind of performance or concert. On William Durie—the old precentor—sounding the keynote from his whistle, immediately all the people joined in, and, keeping time to the evolutions of the pitchpipe, they sang together with great sound and evident pleasure."

The sterner spirits, however, regarded the use of this instrument in the house of God with great abhorrence. Sir Walter Scott tells that, on his first interview with "Old Mortality," he found that the spirit of the sturdy Covenanter had been sorely vexed by hearing in a certain

kirk the psalmody directed by a pitchpipe, which to him was the abomination of abominations.

The pitchpipe now presented to the Museum (fig. 1) is made of mahogany, and, considering its age, is in excellent preservation. It consists of a long stopped diapason pipe, fitted with a movable graduated stopper, adjustable to any note of the scale. By pushing the stopper inwards, or pulling it outwards, an adept could play a tune: only, the tone being somewhat strident and coercive, it is better adapted as a prelude to the singing of the Psalms in the house of God. Directly attacking the nervous system, the shrill notes of the pitchpipe roused the sleepers when everything else had failed, and at the same time indicated the keynote to the congregation.

The dimensions of the pitchpipe are as follows:—

| | | |
|---|---|---|
| Length of pipe . . . . . | $13\frac{3}{8}$ | inches. |
| Length of stopper . . . . . | $11\frac{3}{8}$ | ,, |
| Length extended . . . . . | $21\frac{5}{8}$ | ,, |
| Pipe . . . . . | $\frac{7}{8}$ | ,, square. |
| Length of scale . . . . . | $5\frac{5}{8}$ | ,, |

on which the following notes are marked:—

| F | ♯ | G | ♯ | A | ♯ | B | C | ♯ | D | ♯ | E | F | ♯ | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Mr Herbert Diggle, Cupar, a member of the Pianoforte Tuners' Association, tested the pitch of this unique instrument, and found that the note C

corresponded with the Society of Arts standard pitch, the vibrations of which are 530 per second. Mr Diggle regards the pitchpipe as a great curiosity, and said he had never before seen such an old-fashioned device.

Alongside the older and more formidable-looking instrument may be placed a specimen of Eardley's patent chromatic pitchpipe, which consists of a small reed pipe of the free species in which the length of the

vibrating portion of metal is controlled by a rotating spiral. As may be seen, it is less bulky than the more ancient contrivance, but as regards pitch the two coincide, both corresponding with the Society of Arts standard pitch.

In Cooper's novel, *The Last of the Mohicans*, the ancient pitchpipe plays a conspicuous part. David Gamut, a half-witted musician, is introduced, treasuring beneath the flap of an enormous pocket an unknown engine, which turns out to be the beloved pitchpipe of the master of song. Throughout the tale, David repeatedly essays the virtues of his much-prized instrument. Performing the indispensable preliminaries, the singer produces from it a high, shrill sound, followed by its lower octave from his own voice. Then, without circumlocution or apology, he sings a psalm in such full and melodious tones that the surrounding savages are astounded by the upliftings of his mighty voice. David accompanies the delivery of the skilful rhymes by the regular rise and fall of his right hand, his fingers dwelling at the descent on the leaves of his psalm-book ; and on the ascent there ensues such a flourish of the arms, that none but the initiated could ever hope to imitate. David believed that his immunity from death at the massacre of William Henry was due to the saving virtues of his pitchpipe and power of song. Both of these he exerted to the utmost in the hour of danger, pouring forth a strain so powerful as to be heard even amid the din of that bloody field. But Hawk-Eye the scout expressed the truth when he remarked, as he significantly tapped his forehead : "The Indians never harm a non-composer."

The history of the pitchpipe now under consideration is lost in the obscurity of the early part of last century ; but without doubt this obsolete instrument, now superseded by wonderful inventions, has often sounded the prelude of the joyous voicing of congregations long since gone from this earth. That it was used in the Kirk of Cults through the early years of last century is indisputable, and that Sir David Wilkie often heard it in his youth, follows as a matter of course. Had Wilkie done for the old Precentor what he did for the "Blind Fiddler," or

"Pitlessie Fair," the story of this quaint old instrument might have ranked among the classics of our land.

The following note is added by Mr F. R. Coles:—"In October 1899, among other curious objects, a wooden pitchpipe was left with me by Mr J. Falconer, of Dundee. In general, it resembles the pipe above described, being of mahogany, and measuring, when closed, $13\frac{1}{8}$ inches, with a horizontal breadth of $1\frac{1}{4}$ inches, and a vertical thickness of $1\frac{1}{2}$ inches. The bar carrying the scale was kept from being pulled entirely out of the tube by a small wooden peg plugged into the bottom of the pipe, and over which there ran a slot in the bar. Into the upper surface of the scale-bar, a thin piece of white wood (possibly willow?) had been inlaid, so as to throw up into greater relief the horizontal lines marking the scale; and these lines, as well as the names of the notes, were neatly cut and darkened with some blackish pigment. But the greatest difference between the Cults pitchpipe and this one from Dundee is to be observed in the scales. In the Cults pipe the scale begins on the note F, the first space on the treble clef, and ends on the upper G, ascending by semitones. In the Dundee pipe, the scale is from D below the clef to the octave above, also ascending by semitones, but not having the semitones correctly named. Another minute difference is that, in the Dundee pipe, instead of the sign ♯ in common usage to designate a sharp, the maker has cut a neat double-lined St Andrew's cross. And either he, or the owner of the pitchpipe, has cut the initials W C within a deeply cut oblong cavity just below the air-hole.

"I learn from Mr R. Milne, formerly of the Third Battalion Royal Scots Regiment, now an attendant in the Museum, that pitchpipes of a similar kind were sent down from Pimlico to the regiment, in order to keep the pitch correctly for the bagpipes.

"The approximate date of any of these pitchpipes can best be computed by a careful comparison of the difference between their pitch and that of the modern standard 'concert-pitch.' In the absence, however, of a sufficiently varied number of pitchpipes, it will be safe to assert only that, the lower the pitch is, the older is the pipe likely to be."

MONDAY, 8*th January* 1906.

DAVID CHRISTISON, M.D., Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

Dr JOHN AITKEN, Ardenlea, Falkirk.
ANDREW EDWARD MURRAY, W.S., 7 Eton Terrace.
JAMES LYLE, Waverley, Queen's Crescent.
The Very Rev. JAMES C. RUSSELL, D.D., 9 Coates Gardens.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By the DAUGHTERS of the late JOHN BUCHANAN, Esq., LL.D., Glasgow.

Collection of antiquities of various kinds, comprising—

Two fragments of decorated "Samian" ware and a fragment of an Inscribed Stone, with II in one line and V in the line below, from Cadder.

Base of a small Vessel of soft red ware, from New Kilpatrick.

Fragment of decorated "Samian" ware Bowl, small shallow Vessel of "Samian" ware $2\frac{7}{8}$ inches in diameter and $1\frac{1}{4}$ inches in depth, plain; two small decorated fragments of the same ware; portion of large shallow Vessel of reddish ware 9 inches in diameter by $3\frac{1}{4}$ inches in depth; handle and portion of Vessel of smooth greyish ware; handle of Amphora, with potter's stamp VMEDIC; portion of small terra-cotta Bust of Female Figure, described in Stuart's *Caledonia Romana*, p. 348; six fragments of Tiles; small portion of the rim of a glass Vessel,—all from Castlecary.

Fragment from arch of gateway at Garscadden, with inscription "OMNIA FIRMAT."

Stone Cup, slightly oval, measuring over all $5\frac{1}{4} \times 3\frac{5}{8}$ inches, across the

hollow $2\frac{3}{4} \times 2\frac{1}{2}$ inches, and $\frac{7}{8}$ inch in depth, with short rounded handle at one side, from a tumulus at Gallowflat, Rutherglen.

Four blue, decorated, glazed Tiles, 5 inches square, from Slatefield.

Pocket Sun-dial, with Compass and hinged Gnomon, in brass case, with lid to screw on.

Embroidered Satchel, lettered in red silk thread — I LIEVE AND DEY IN CONSTANCIE. ABSENCE NEVER PAIRTS LOYAL [HEARTS]—the last word being symbolised by the figure of two hearts entwined.

Flat piece of lead, 8 by $5\frac{1}{2}$ inches, pierced for seven nails, found underneath one of the dug-out canoes discovered in May 1852 at Clydehaugh, near Govan.

Piece of Mosaic from Hadrian's Villa; and fragment of the Arm of marble Statue, with the Hand of a child resting on it, from the Baths of Constantine, Rome.

Small slab of grey sandstone, with figure of Hindoo Goddess, from Sangor, Central India; and brass Figure of Krishna, from Benares.

Bridle-bit of iron, from Cawnpore.

(2) By the MASTER OF THE ROLLS.

Acts of the Privy Council of England, New Series, vol. xxix., 1598–99, and vol. xxx., 1599–1600; Calendar of Close Rolls, Edward III., vol. viii., 1346–49; Close Rolls, Henry III., 1231–34; Patent Rolls, Richard II., 1391–96; Patent Rolls, Henry IV., vol. ii., 1401–05; Year-Books, 18 and 19 of the Reign of Edward III.; State Papers, Ireland, 1660–62; Treasury Books, vol. ii., 1667–68; State Papers, America and West Indies, 1697–98.

There was exhibited :—

(1) By Mr C. O. DUSSEL, 8 Danube Street, through Mr JAMES URQUHART, F.S.A. Scot.

An ornamental horse-crupper from Kirkwall, Orkney (fig. 1), consisting of thirty brass plaques affixed to two longitudinal straps of leather,

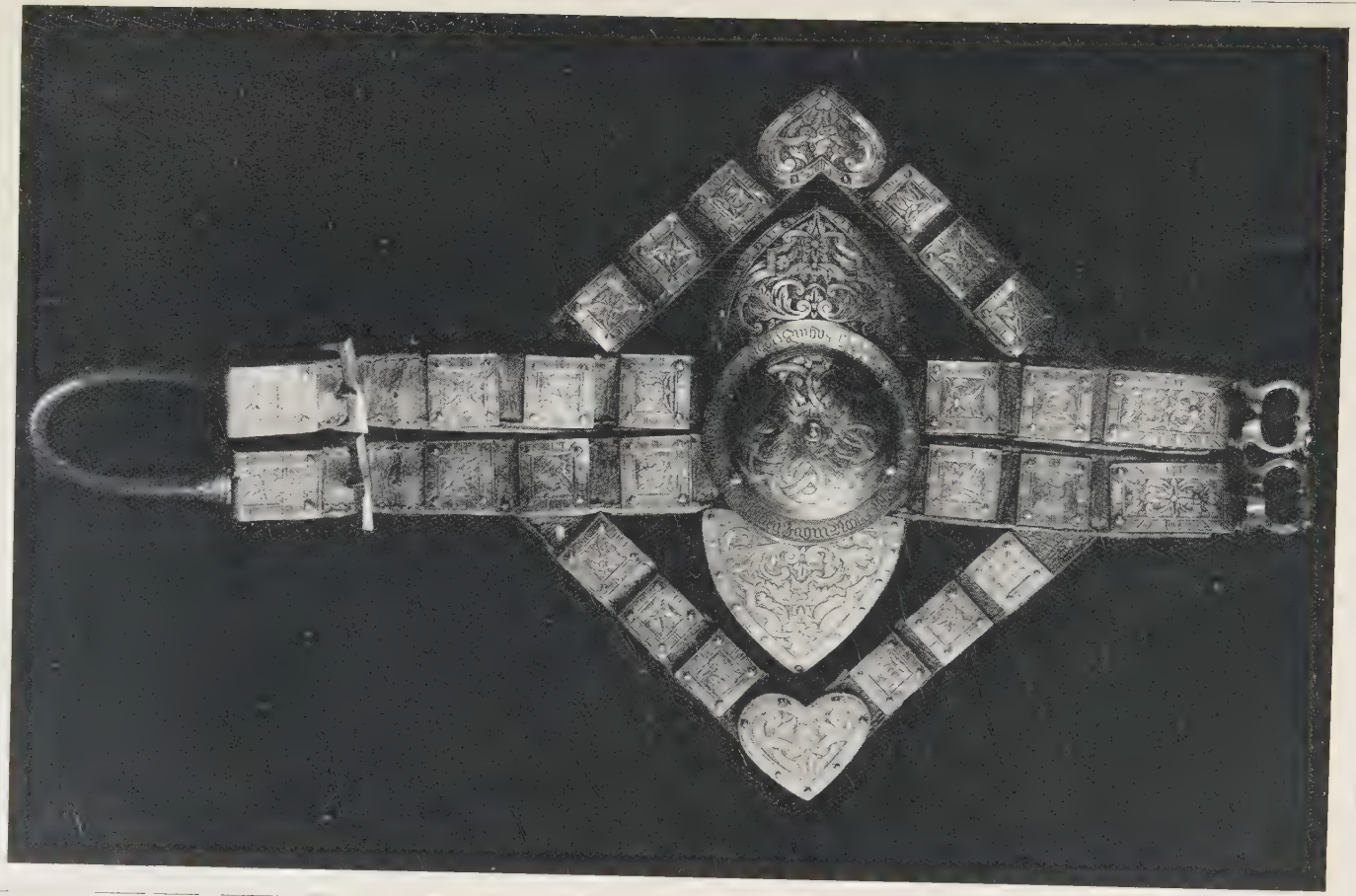


Fig. 1. Ornamented Crupper of a Lady's Saddle from Iceland.

with a lozenge-shaped centre-piece consisting of a central boss flanked by two side-pieces of triangular curvature. The length, including the buckles at the end, is $21\frac{1}{2}$ inches, and the breadth from point to point of the lozenge-shaped part is $14\frac{1}{2}$ inches. The terminal plaques are oblong, those at the posterior end being $1\frac{7}{8}$ inches in length by $1\frac{1}{2}$ inches in breadth, and those at the anterior end $2\frac{1}{2}$ inches in length by $1\frac{1}{2}$ inches in breadth. The other ten plaques on the longitudinal straps are $1\frac{3}{8}$ inches square and placed half an inch apart. Twelve similar square plaques are similarly placed on the straps which make the lozenge-shaped part, and the two terminals on the outer side angles of the lozenge are heart-shaped. The central boss is $3\frac{3}{8}$ inches in diameter, surrounded by a flat border half an inch in width. The flanking plaques of triangular curvature measure $3\frac{3}{8}$ inches along each side. The oblong and square plaques are chased with a floral device in an oblong or square panel in the centre of each, surrounded by a border crossed at intervals by groups of parallel lines. The heart-shaped plaques have each a bear seated upright, and looking out of the floral scroll with his fore-paws clasped round two of its branches. The plates of triangular curvature which flank the boss have an elaborate floral scroll filling the space within a border of the same character as that of the other plaques, but studded with small boss-like nail-heads at intervals of $\frac{3}{4}$ of an inch. There are similar nail-heads in the angles of the margins of the oblong and square plaques, and round the margin of the heart-shaped plaques. The central boss has four such studs round the margin and one on the top, and the whole of its convexity is chased with an elaborate pattern of interlaced work, with incipient leafage at intervals. Round the flat margin of the boss is an Icelandic inscription incised in the old black-letter character, which Mr Eiríkr Magnússon of the Cambridge University Library, in a letter to Dr Anderson, discusses and explains as follows :—

"The inscription of which you send me a rubbing and a correct transliteration proves the boss on which it is engraved to have been an ornamental affixture to a *crupper* attached to a saddle given to a bride on the occasion of her bridal ride, or procession on horseback, with her party to the church, or

to the place where the wedding feast was to be given. This the translation of the quatrain will bear out inferentially.

"The quatrain is in Icelandic. In form it is an absolutely perfect piece of poetry, and yet of an elaborate technique. The language is remarkably pure, and, in want of any data, may belong to any time from, say, 1600 to 1800; but must belong to the time when ladies' saddles and harness decorated with ornamental plaque-work in brass were most in vogue—the 18th century.

"I will now give you a copy of the quatrain such as will exhibit at a glance the technique of its poetical form :—

| | | | | | |
|---|---|---|---|---|---|
| Reidiñ | Gagni | | *B*rwdi | *B*est | |
| *B*yriñ | | Frægda | | | Dafni |
| Leidiñ | Fagni | | *M*ooti | *M*est | |
| *M*edur | | þægda | | | Safni |

"The vertical arrangement shows the *assonantic* syllables, the letters in italic type show the *alliteration*. Reduced to ordinary 18th century spelling, the verse reads :—

Reidinn gagni brúdi best,
Byrinn frægða dafni,
Leidinn fagni móti mest,
Medur þægda safni.

Before interpreting the verse, I must call attention to the assonantic first words of lines 1 and 3 : *reiðinn*, *leiðinn*—I use the normal spelling of to-day. At the end of a word the *un*stressed syllable *inn* has the same sound volume as the (unstressed) syllable *in* ; therefore :

1st, Reidiñ may stand for reiðinn or reiðin.
2nd, Leidiñ „ „ leiðinn or leiðin.

"Both words stand in nom. case with definite article *hinn* or *inn* = Engl. *the* suffixed. Therefore : Reið-inn = reiði'nn (reiði hinn, reiði inn) may be nom. of reiði, m. (=a crupper), meaning *the* crupper ; or it may be nom. of *reið*, f., a ride, *reiðin* (*in* = the fem. of the article hin, 'in) = *the ride*. Now both *crupper* and *ride* suit the sense of the first line equally well ; so I take it the author meant *reiðin(n)* to have the double meaning I have pointed out.

"*Leidiñ* can stand for *leiðinn*, m., *the* tedium, *the* weariness (unfulfilled desire of a love-lorn heart) ; or it may stand for *leidiñ*, f., which I think has here the sense of *leet*, assembly, wedding party. Accordingly the translation of the quatrain will be :

Let the { ride / crupper } suit the bride in the best manner,
Let the fair wind of renown(ed deeds) increase (for the couple to be married),
Let the { weariness / wedding party } rejoice at its most in the meeting (of bride and bridegroom),
With a collection of *comforts* (wedding presents).

"*gagni* = pres. subj. of *gagna*, be of gain, suit; *brúði*, dat. s. of *brúðr*, bride; *Byrr*, 'bearing,' fair wind; *best*, superl. of *góðr*, best; *frægða*, gen. pl. of *frægð*, fame, renown, deed worthy of fame; *dafni*, subj. of *dafna*, to thrive, increase; *fagni*, subj. of *fagna* ('fawn' upon), rejoice; *mest*, most; *medur*, prep. with dat. with; *þægða*, gen. pl. of *þægð*, f., an obliging act, gratifying deed, comfort conferred upon a person, winning gift; *safni*, dat. sing. of *safn*, n., collection.

"In his *Reise igiennem Island*, 1772, pt. i. p. 44, Eggert Olafsson gives a description of the 18th century lady's saddle in Iceland as follows:—

"'In other places of the country the ladies ride by themselves in a *lady's saddle*, somewhat resembling those in use in Denmark. Yet the Icelandic saddles are much more decorated. They are lined by blue or green cloth, covered by brass work, and here and there ornamented by large bosses of the same metal, engraved by foliate designs, animals and birds. The bridle, crupper, and breast-straps are also thickly set with bosses of brass.'

"This antiquarian curiosity is very valuable, now that all traces of brass-bound ladies' saddles seem to have vanished in Iceland."

As the crupper has been thus shown to be undoubtedly a product of Icelandic handicraft, probably of the 18th century, it would have been interesting to have known how and when it came to Kirkwall; but unfortunately, although it is known to have been there for at least fifty or sixty years, no traces of its previous history appear to be obtainable.

The following Communications were read:—

## I.

### NOTES ON THE INVENTORIES OF THE HOUSE OF ROSSIE, NEAR MONTROSE, DATING FROM THE YEAR 1693 TO 1740. By ALEX. O. CURLE, Secretary.

The old house of Rossie stood on the south side of the South Esk, a few miles west of the town of Montrose, and a short distance from the site of the present mansion-house. The Castle of Craig, mention of which occurs several times in the inventories, was demolished many years ago. It stood in the present garden of Rossie, where a fragment of its ruin still exists, or till recently existed.[1] In Ochterlony's account of the shire of Forfar, 1684–5, Craig and Rossie are described as "two excellent houses, rebuilt, with excellent good yards, orchards, and planting. Craig hath an excellent fountaine, with a large basone of hewen stone, whereunto water is conveyed by pypes of lead from a spring at a good distance." A third house to which that author refers as belonging to the family was doubtless Ulis-haven, or, as it is called in these inventories, "Ulisses Haven."

Patrick Scott succeeded to Rossie and Craig on the death of his father in 1690, and three years thereafter married Margaret, daughter of Sir Archibald Hope of Rankeillor, one of the Lords of Session, and is said to have died in 1731, leaving several children.

In the year 1739 Margaret Scott, his widow, made an inventory of all the furniture and plenishing in Rossie, also of the linen from the Craig, of one-third of the plenishing of Ulisses Haven, and of such other furnishings, etc. as were her own property. The inventories seem to have been made for one of her family, probably for her son on the occasion of his marriage, and her vacating the house of Rossie for his young bride.

As in great part the furnishings of all mansion-houses from one period to another must remain of the same character—a bedroom must

[1] Warden's *Forfarshire.*

have its bed, and a dining-room its table and chairs—it were a needless task to set down here lists of such articles as are still in common use, or which in their description show no peculiarities. I shall therefore merely abstract from the inventories, which extend to thirty-two pages, such material as may be of special interest.

The first list is that of the "Linens from the Craig, after my husband's death."

This includes, besides the usual linen, feather-beds, cods (pillows), cod wares (pillow-cases), a scarlet bed with silk fringes, a blue bed, and a purple bed—four-posters, with their canopies and curtains of bright coloured material; and we may here note that the beds in Rossie are likewise described by their colours—green, red, and yellow—that in the lady's own room being "a copper-coloured Alasand-bed."[1]

Next follows an "Account of the Tea Equipage."

There is a black tea press, in which no doubt the "equipage" was kept. The china is red and white, and the morning cups and "trinchers" (*i.e.* plates) "uniform to the cupps" are blue and white. There are also afternoon cups, which shows that tea was in frequent use. A silver "tract pot" and a china "draw pott" we should now simply call tea-pots. There are coffee mills, for the coffee was roasted and ground at home; and a silver "transvarer" is presumably a punch-ladle for transferring punch from the bowl to the glass.

The list of glasses contains "10 water glasses with 8 saucers for them," and also, besides glass decanters, four of "lime," *i.e.* earthenware; 4 capps, which are small wooden bowls for containing food; "2 wand baskets lined with white iron," and "6 bottle frames," which were probably wine slides. Of wine-glasses there is no mention, but in a press in the big hall and in the closet off my lady's chamber were to be found two "caves," with glasses in them. At this period nests of glasses, *i.e.* a number of small tumblers fitting closely into each other,

[1] Alexander, or Bourde de Alisaundre, a stuff which took its name from Alexandria in Egypt, where, though not exclusively, it was manufactured. It is supposed to have been a striped silk.—(*The Drapers' Dictionary.*)

and probably all contained in a case with a lid, were in common use, and I suggest that such may have been the "caves" referred to, or perhaps wooden cases, such as are still met with, containing an assortment of glasses and bottles.

The dining-room was well hung with family portraits. "My Lord Rankeillor and his Lady," "Sir William Nairn and his Lady," and many presentments of the Scott family, looked down from its walls. "A Jolly Companie behind the Door" and "Remember That" were works of a different class. "A corner cupboard with a pretty picture on the tope" is a variety of corner cupboard unknown to us now. The only furnishings conspicuously absent from the inventory of the room, in fact from all the rooms, are carpets; but from this it must not be inferred that there were none—for Turkey carpets, or rugs, were to be found in the houses of the wealthy in Scotland at least a century before this date. The omission of baths of all sorts will, however, quite justify the inference that they did not exist.

In the drawing-room were more family portraits. "My great-grandfather's portrait," Sir Thomas Hope of Craighall, King's Advocate, Lord Craighall's picture and his Lady's, and several more. In the panelling above the fireplace—the "bress"—was a "pretty picture," and "The Emblem of Old Age" was skyed above the door. There were six "two-armed chairs"—not the luxurious arm-chairs of the present day—and a pair of spinets, to which the ladies, in their flowered brocades, with their powdered hair, sang their old-world songs and ballads. A clock that went eight days, a weather-glass, a mahogany tea-table, a box with playing tables, the latter probably for chess and backgammon, and a mirror completed the furnishing,—a scantily furnished drawing-room, you may say, for a mansion that boasted eighteen chairs and several tables in the dining-room; but the drawing-room occupied a less important position among the public rooms in those days, and was probably only used by the ladies of the household as a boudoir. The furnishing of the bedrooms was on a much more lavish scale, as the fashion of receiving company in them had not perhaps gone out in

Scotland by this date. In the Green room we find, besides six ordinary chairs, an easy-chair, an "armed chair," two stools, and a large settee, "the room hung" either with stamped leather or fabric of some sort, wall-papers not yet being in use. The "Stamped room" suggests leather hangings. Only in the "Dark room," where the blue bed was, and in the nursery, were there chests of drawers. In the "big hall" were the presses where the great stores of hand-woven linen lay in lavender, and there also stood a resting chair, which certainly suggests comfort. There were ten rooms, including closets, dark and light, in which were beds. The female servants most likely occupied the "woman house," probably an outhouse, where, with the spinning-wheels and "chack reels" for winding the yarns, were three beds, "with bedding conform." In "Rossie's garret" lay the usual miscellaneous collection of articles, superannuated or not in daily use, that such places contain,—a cradle and cradle cover, with its curtains, a stone table lying flat on the floor, pewter plates, moulds for moulding candles, sets of weights, "hisps," *i.e.* hanks of yarn, "for working fowling nets," boxes, hampers, a side-saddle, and a hobby-horse. There was a laundry, well found with all requisites, and a kitchen, with pots, pans, and dishes in abundance. In the inventory of the kitchen utensils we may note—"colop tongs," "a footman for the tea kettle,"—the footman being an iron or brass stand with feet for holding a kettle before the fire,—while seven pewter chamber-pots, as well as four of earthenware, and four of stone, seem strangely out of place. There were numerous candlesticks and snuffers, and but three bells—a large bell, which probably was used to announce the arrival of the dinner hour; one hanging bell, perchance connected with the dining-room; and a chamber bell, not specified as hanging. This completes the furnishings of the various apartments.

A milk-house there was also, wherein were churns and cheese fitts, *i.e.* vats; a brewhouse, with the vessels wherewith to brew the beer—kimmers, masking vats, wort stones—as well as a supply of barrels, ankers, and casks, and a cellar containing four buffstands, powdering tubs, two flower stands, a meal chest, a salt girnel, and two "tonnels."

Now we shall consider the special inventories; and first let us look at that detailing the linen. What quantities of it there appear to be! Table linen and sheets by the dozen—the former carefully marked with initials, and dates ranging from 1693 to 1724, and distinguished by various "knotts" or patterns. There is the "levinder knott," "the hundred rose knott," "the heart knott," "the star knott," "Craig knott," "Balgais knott," "Dutch knott," "Rossie knott," and an "old-fashioned knott that came from the Craig." The fingering[1] blankets date from 1666 onwards, and are several of them parti-coloured—scarlet and green—red, green, and black—and one large pair was "sewed all round scarlet and green."

At the church, in the Rossie loft no doubt, were "two carpets, two black cloacks and carpets upon the seats," and also there are noted "Two communion cups, which I delivered Mr Stephen, minister of Craig, was left by Strickathrow's great-grandfather."

The list of articles the writer of the inventory received from her "worthy mother, Lady Rankeilor," besides much linen and a press to keep it in, included two cradles with their furnishings, the Alasant stuff bed, with its bedclothes; "one hundred ells of stuff for hanging the room"; "4 pieces for a bed of stampt stuff; also one dozen Rushia leather chairs for the bigg hall."

A faint savour of romance hovers around the next lists—those of her wedding gifts and her trousseau. We sometimes fancy that the giving of wedding gifts is a comparatively modern fashion. This is quite a fallacy, as the following shows:—

Account of what silver plate came by me and Tokens from my Friends in the year 1693.

By the Earle of Southesk, a Bigg Silver Dish in two halfs—which is at present made in a tea-pott, and two silver juggs.

By the Countess of Rothess, silver casters, three for suggar, mustard, and peper.

By my Lady Hopton, two salvers, a caddel dish, a silver jugg.

By the Countess of Weems, a ring with three Large Diamonds and four small betwixt them.

[1] Of fine material, as distinguished from wheeling blankets of coarser make.

By the Countess of Leven, a ring with one Emerald, with three diamonds in each end of the Emerald.

By Lady Margt Weems, now Countess of Northesk, a massy gold ring, wt two dozen fine Dyper (diaper linen).

By my uncle Sir John Aiton, a Ring wt six Diamonds.

By my aunt, Sir John Harper's Lady, a four guinea piece, wt my grandfather and grandmother's picture, and my great-grandfather's picture, Sir Thomas Hope of Craighall.

By Mr Wylie, a bigg glass and six agget hefted knives.

By Lady Commiston, a five guinea piece.

By Mrs James Martine, two silver candlesticks.

By Mrs Arbuthnot, Rossie's mother's sister, one feather bed, wt a bolster and two cods, two pair of sheets, and four codwars.

By Rossie, my husband, a gold watch, two gold sealls and a silver one, one Diamond Ring wt seven diamonds, a Diamond Ring wt one stone, a Ring with a garland, wt a pretty pocket glass and five five guinea pieces, and a fine sable tippet, a fine paste necklace, a dressing glass, wt boxes of all sorts that were useful. A pair gold philigram buttons.

By my Father, a Ring wt a large Ruby, wt three diamonds on each side, a Ring wt other seven set as a Rose.

By the Lady Knox, a necklace of Amethysts, three ells of broad gold lace.

By my Mother, a small jewel for a Breast, set like a large Rose.

By Rossie's Father, a pretty Jewel, which I gave the Earle Southesk's son in a present, as I did all the rest, among my children and kind friends.

By Mrs Armer, a chained Ring wt 7 or 8 Turkasses in't.

Sent by my Mother after I came to Rossie, five stone of wool, wt sixty Ewes and Lambs.

By the Earle Northesk, a very Handsome Galloway.

By my Lord Southesk, a fine cow and calf, a breed of Geese, Ducks, and Turkeys, and feasine fowls in plentie.

By my uncle Sir James Weems, twelve dozen parret coal.

The gifts are remarkably varied—fine jewellery in abundance—farm stock, poultry, pheasants—the latter, I think, probably kept in an aviary to be killed for the table when required. The twelve dozen parrot coal is puzzling. This mineral, now generally known as cannel coal, is used in the manufacture of gas, and is not a good household coal. It burns with a very bright light, and is said to have been used in former days as a luminant, and such a purpose it may have been intended to serve in this instance. It was, or is still, obtained at Torrie in Fife.

Surely this young lady must have been endowed with an unwonted charm to have had so many precious tokens of friendship bestowed on her; and does not her kindly nature shine out even through the dry details of her inventories—as when she mentions the distribution

of her jewels among her children and kind friends? The next entry following the list of "tokens" relating to her trousseau suggests the current of her thoughts back to those far-off days, near half a century before, when, as a youthful bride, she came to the house of Rossie or the Craig. The details may help us to picture her wandering in the "excellent good yards" or orchards at Rossie, or seated beside that "excellent fountaine with its large basone of hewen stone" in the garden at the Craig. Thus does it run :—

"As to my cloathes, I bro$^{t}$ w$^{t}$ me A Green and stript floured w$^{t}$ cherry and silver Mantua[1] (and) Pettycoat trim'd w$^{t}$ a deep silver fringe and Galloons,[2] lyn'd w$^{t}$ a cherry tushey,[3] w$^{t}$ silver.

"A Liomond[4] Mantua and pettycoat stript and floured w$^{t}$ silver and Liomond, lyned with a Liomond good silk and spotted the mounting fabricade, and mounted w$^{t}$ small silver fringes as was the fashion.

"A cherry and green broad stript, as was all the rest, lyn$^{d}$ w$^{t}$ a black and white damask all through.

"A petty coat trimed w$^{t}$ silver fringes, other gowns in abundance conform to my age. Stayes and Linnens in abundance, and pettycoats and smoke[5] pettycoats conform to the above.

"With a suit of handsom Riding cloaths mounted w$^{t}$ six dozen Beatten silver buttons as was the fashion, being a silk camblet cotton skirt lin'd w$^{t}$ silk.

"My own syde sadle w$^{ch}$ I had when a maid.

"Two stone twice hackled lint."

The house of Rossie has long since disappeared, and the property has passed from the hands of Margaret Scott's descendants; but from these inventories, which she laboriously compiled in her old age, we may conjure up a picture of her home, and even obtain a faint glimpse of the personality of the writer herself.

The original inventory was kindly lent to me some years ago by the late Mr J. Douglas Walker, Q.C., a descendant of the Scotts of Rossie.

[1] A loose gown.
[2] A species of silk ribbon used to edge or border clothes.
[3] Tissue.
[4] (?) Lemon.
[5] Smock.

II.

## NOTICE OF A GROUP OF LONG GRAVES, STONE-LINED, NEAR THE SOURCE OF THE WATER OF NORTH ESK. By JOHN W. M. LONEY, F.S.A. Scot.

This group of graves presents the characteristics of a well-known type, which has, however, attracted little notice, doubtless on account of lack of interest arising from the entire absence of grave-goods in asssociation with burials of this description.

I am informed that undescribed groups of graves of similar character have been discovered at Penicuik, at Nunraw, and in the neighbourhood of North Berwick, as well as elsewhere. A group of about twenty such graves found near Uphall has been described by the Rev. James Primrose in the *Proceedings of the Society* (vol. xxxv. p. 325); and another group of three graves, of apparently similar construction and character, at Gladhouse reservoir, has been described to the Society by the Hon. John Abercromby (*Proceedings*, vol. xxxviii. p. 96). Reference may also be made to notices of like graves (1) at Auchterhouse by Mr Alexander Hutcheson, and (2) at Stenton by Dr Richardson (*Proceedings*, vol. xxxix. pp. 393 and 441).

A number of like graves existed at Belhaven, near Dunbar, where their presence was disclosed some fifteen years ago in the raised shell-beach, when cut into by the sea during a severe storm. A short notice of these Belhaven graves was submitted to the Society last session by the Rev. Robert Paul, of Dollar (*Proceedings*, vol. xxxix. p. 350). Five years ago, when I was showing the site of the Belhaven graves to a friend, he was poking about with his walking-stick in the face of the sand-bank, and struck upon the end of an unopened grave. A few days afterwards Mr J. H. Cunningham, Mr Gilbert Goudie, and I opened the grave, where we found a complete adult skeleton in a supine and extended position; but there was no vestige of grave-goods in the surrounding

space of the grave, which was clear of either sand or gravel. No plans, measurements, or photographs were taken, and no notice of the find was formally brought before the Society.

Being thus fairly familiar with this type of grave, I at once recognised the North Esk graves as likely to be of interest when their existence was pointed out to me in June last by Mr John Tod, the keeper of the North Esk reservoir, to whom I am indebted not only for means of access to a somewhat inaccessible spot and for facilities to examine the graves, but also for practical assistance, and much information on matters of fact which he has kindly placed at my disposal.

This group, though comparatively few in number, is fairly complete, and its present position is peculiar and precarious, in that a more than usually severe winter might easily bring about the total destruction of the site. It seems, therefore, desirable to put on record the facts I have been able to ascertain regarding the discovery of the graves and their present condition.

Their natural site was originally a small double-topped knoll on the north-east side of the Water of North Esk, where it was joined by the "Gutterford" (formerly apparently known as the "Doit") Burn, flowing in a southerly direction between the Cock Rig and the Spittal Hill. The knoll was situated on the extreme western confines of the parish of Penicuik, between which and the parish of Linton the Water of North Esk formed the boundary at this point. The parish boundary has now followed the shore of the reservoir a little further west.

The knoll is composed of a bluish-grey shaly sandstone, lying at a somewhat steep inclination to the horizon. The stone in this position readily admits of being split into the rough slabs of which the grave linings are constructed, though in one or two of the graves the flooring stones were noted to be of the red sandstone which is found on the Cairn Hills, at a distance of two or three miles away in a north-westerly direction.

The accompanying plan of the district (fig. 1) has been made up and photographed from Bartholomew's pedestrians' map of the Pentland

Hills, and there have been added one or two place-names taken from the first 6-in. Ordnance Survey map. The plan shows the narrow valley opening to the south. The elevation at the water-level is somewhere

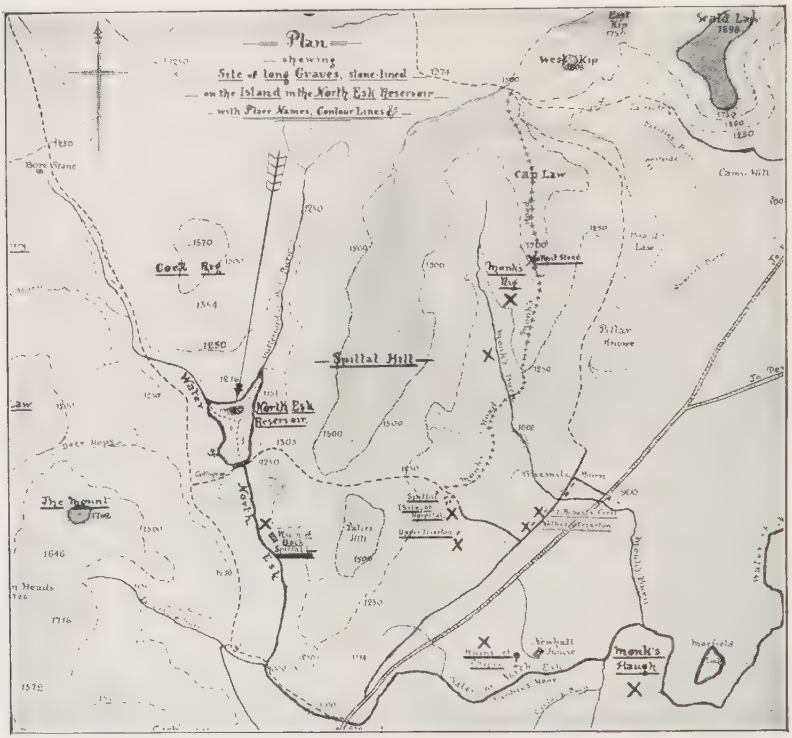



Fig. 1. Plan of the District, showing the site of the Graves.
Scale $1\frac{1}{4}$ inches to the mile.

between 1100 and 1200 feet above the sea, the surrounding hills rising to 1500, 1500, and 1700 feet respectively.

The knoll sloped gently upwards from the south and dipped rapidly to the north, whence the ground rose again sharply, merging in the

hillside which rises to the Cock Rig, or Cook Rig of the Spitals, as it is named in the *Description of Tweed-dale*, by Dr Alexander Pennecuik, who lived at Newhall, between 1652 and 1722, and to whose book, published, with notes, at Leith in 1815, much of the ecclesiastical tradition with which the neighbourhood abounds may be traced.

In 1850 the knoll became two small islands when the North Esk reservoir was formed by the construction of a dam across the valley about 400 yards to the south, for the purpose of providing a continuous supply of water for the use of the mills along the course of the river to its outfall at Musselburgh.

The first Ordnance Survey map shows both islands, but the revised Survey shows only that to the east, the waves of the reservoir during the winter storms having swept away the covering of soil on the west island, which is now submerged at high-water, and exists only as a rocky gravel bank when the water in the reservoir is low. There is now no apparent trace on its surface of graves having existed upon it.

In 1855 the records kept for the owners of the reservoir show that on the east island a number of different sorts of trees were planted. Of these, however, only some fifteen Scots firs have survived; and, in addition, there are some five or six self-sown rowan trees. To the binding effect of the roots of these trees on the scanty covering of soil the island owes its preservation from the fate of its sister islet to the west. As it is, the island has been much decreased in size; and in an unusually severe storm of wind some twenty years ago, when the reservoir was at its height, and its surface covered with floating ice, the island was temporarily submerged, and much of its soil swept away by the action of the waves and the grinding of the ice. The devastation caused by this storm revealed the existence of the graves. A view of the island, looking eastwards, showing its trees and covering of soil and its foreshore, which is submerged at high-water, is given in fig. 2. In another view of the island, looking westwards (fig. 3), the positions of some of the graves are shown by digging-tools.

The disclosed graves were at once noticed by Mr Garnock, the late

keeper of the reservoir, but no written record seems to have been made of the occurrence. I have ascertained from Mrs Tod, Mr Garnock's

Fig. 2. View of the Island looking eastwards.

daughter, and the wife of his successor in office, that Mr Garnock examined all the graves then disclosed, and opened one in the soil surface, probably that marked by the axe in the photograph, but that he found

no relics of the nature of grave-goods, though fragments of human skulls, teeth, and bones were seen.

The ground plan of the island (fig. 4) gives a complete survey, and a section across its centre from north to south on the line A B C. For this survey and section I am under obligation to Mr J. H. Cunningham.

Fig. 3. View of the Island looking westward, and showing some of the Graves.

The graves marked Ia, I, VI, VII, X, and XI were either laid bare during this storm, or have since been made apparent by the wearing away of the soil of the island under a similar process.

The depth of soil on the island varies from 18 to 24 inches, after piercing which the graves seem to have been scooped out of the soft natural rock to the required size. They are usually floored and lined

with three or more slabs on each side, and with a single slab at each end. They were also apparently covered with like slabs, and the junctions of the slabs seem to have been filled in with smaller stones on the outside. With two exceptions after mentioned, the general size of the graves points to burial in each of one adult person in an extended position, without a coffin. The graves were entirely filled with soil and gravel, in which respect they resemble the Gladhouse graves, and differ from those of Belhaven. Whether this condition has resulted from natural processes, or was brought about by intention at the time of burial, it is difficult to say. I note that Mr Abercromby, in describing the Gladhouse graves, inclines to the latter view.

From the position of the side stones in one of the graves, No. III (fig. 10), it would almost appear as if the body had first been laid on the prepared floor of the grave, and the sides and ends thereafter put into position, so closely is the general outline of a human figure followed.

The plan (fig. 4) shows (first) all that is left of the natural surface of the island; (second) the denuded gravel and rock of the foreshore, with a few detached pieces of turf-covered soil washed down from the main soil surface, also the high-water level of the reservoir last winter, it never having been full; and (third) the water-mark of the reservoir when the survey was made, the depth of the water in the reservoir being then only some 32 feet—an abnormal condition, brought about by the drought of the past summer, which was of some importance in the work of exploration and excavation.

The section is self-explanatory, and is useful in showing that the graves at high-water are beneath the water-level,—a fact which, in the porous condition of the gravel and rock through which the water must freely percolate, may perhaps account for the silted-up condition of the graves, and certainly abundantly accounts for the almost entire absence now of human remains therein.

The plan further shows that the graves are all *approximately*, though not exactly, in an oriented position; and the dotted lines which I have

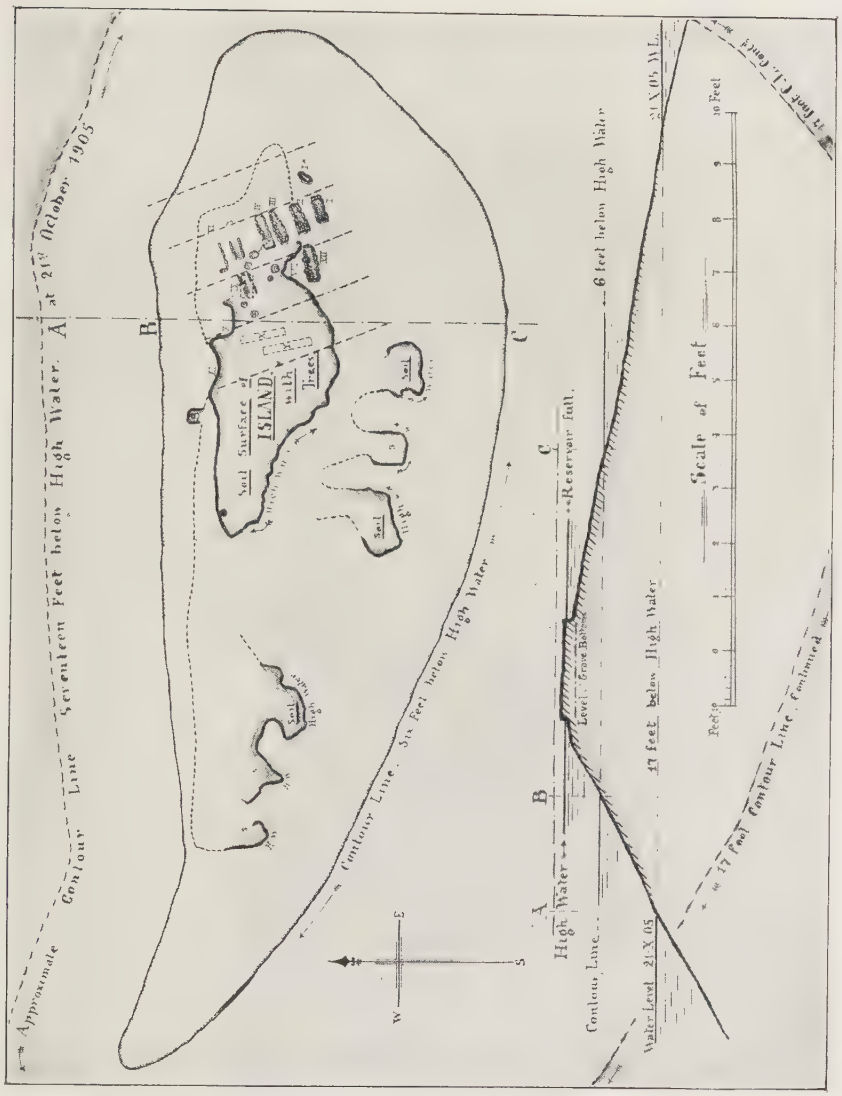

Approximate Contour Line Seventeen Feet below High Water. A at 21st October, 1905
Sand Surface of ISLAND with Trees
Sand
Contour Line Six Feet below High Water
Reservoir full.
Level Grave Bottom
6 feet below High Water
High Water
Contour Line
17 feet below High Water
Water Level 21 X 05
Scale of Feet
17 Feet Contour Line Continued

Fig. 4. Plan and Section of the Island.

put on the plan show that the graves lie in three rows, with possible indications of a fourth to the west.

Grave VII (fig. 11) is a very perfect structure, and in itself proves the existence of the third row, without putting too much reliance upon the washed-out spaces marked VIII and X as indicative of the sites of graves. By excavation at the point marked IX (shown in figs. 2 and 3 by a spade handle), I satisfied myself that there is there another grave in correct alignment with VII and VIII, but the trunks and roots of the surrounding trees prevented more than a small opening, which disclosed covering stones, two or three side stones, and two stones close together on edge in a perpendicular position at right angles to the side stones, which were suggestive of the head stone of one grave and the foot stone of another. The spot could only be very partially excavated, however, and the growth of the trees had no doubt disarranged the structure. I saw no vestige of human remains, nor anything of the nature of grave-goods; and a photograph could not be obtained.

As to the probability of a fourth row I cannot speak with certainty. The washed-out space marked XI looks like another grave-site. The experimental cuttings made at X and Y were perhaps not carried deep enough to reach any graves which may be there.

An enlargement of part of the survey is given in fig. 5 to show in more detail the structure and measurements of five of the graves, which were carefully excavated and examined, and which are numbered on the plan (fig. 4) Ia, I, II, III, and VII.

The first row in the plans (fig. 4 and fig. 5) is represented by one grave, Ia, which is the lowest of those shown in the view, fig. 6. It is of very small size, and is obviously the place of interment of an infant. The external measurements are — length 24 inches, breadth at west end 14 inches, and at east end 12 inches. The internal measurements are — length 21 inches, breadth at west end 9 inches, and at east end 8 inches.

This was apparently the only grave which had not been floored with slabs, the bottom consisting solely of the natural rock. The covering

stone or stones were not in position; and, as will be seen from the photograph, the construction is rude and irregular.

The second row contains five very complete graves and the remains of a sixth, with a space in which a seventh may yet be found between the graves marked IV and V on the plan, fig. 4.

Grave I is shown in the middle distance in fig. 6, the third grave

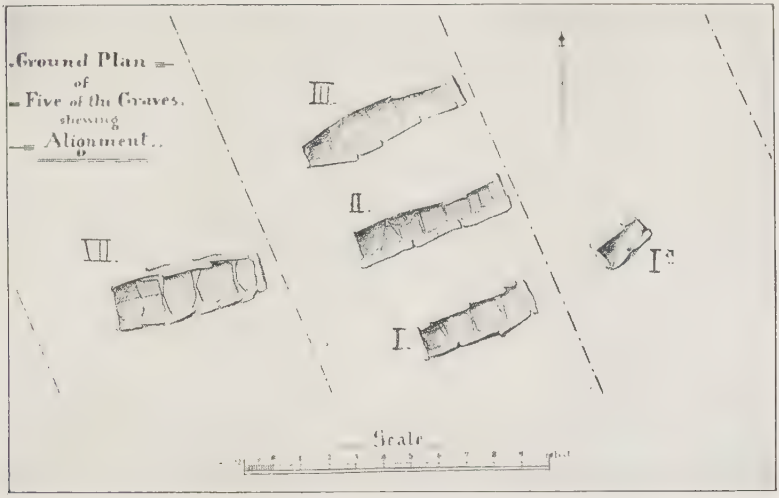



Fig. 5. Plan of five Graves, showing alignment.

in the top right-hand corner (marked by an axe) being the fine grave VII of the third row, to be afterwards illustrated.

Grave I, as shown in fig. 7, is of rude construction. Its external measurements are 4′ 4″ in length, with breadths of 10″ at the west end and 14″ at the centre and east end. Internally it measures 3′ 10″ in length by about a foot in breadth. The ends are each composed of a single stone, and there are three slabs on each side and four on the bottom, the two in the centre being of red Cairn-hill sandstone. The large slabs lying on each side of the grave may have

Fig. 6. View of three of the Graves.

been its covering stones. This grave seems to have been that of a child somewhat older than the occupant of the previous grave Ia. Its narrowness would preclude burial in any other than an extended position.

To the north there was a considerable space between graves I and III, and there were no surface indications of a grave, but, at somewhat greater depth than the average, grave II (fig. 8) was disclosed. Covering stones of small size were in position, and the grave was entirely

Fig. 7. View of Grave I.

filled with sand and gravel, which was carefully examined, but the presence of human remains could not be detected, and there were no grave-goods.

Grave III, already referred to as following closely the contour of a human figure, is shown in fig. 10. It was opened in the spring of 1905 by Mrs Tod, who found a human molar tooth, which she has preserved, and a bone resembling a kneecap, which was again buried.

The illustration (fig. 9) shows on the left the site of the last grave (which had been filled up, but which I again opened), and to the right grave IV, with its eastmost covering stone held in position by tree

Fig. 8. View of Grave II.

Fig. 9. View of Grave IV.

roots. There lies to the right the unopened space, which may yet prove to contain another grave. Grave IV was opened in June 1898, Mr Tod being present. Amongst the gravel which filled the grave

Fig. 10. View of Grave III.

space was found a small portion of a human skull and two crowns of teeth. A paragraph reporting this occurrence appeared in the *Scotsman* of 29th June 1898.

Grave VII, the well-constructed grave already referred to as the

first of the third row, is shown in fig. 11. It is of sufficient size for the burial of an adult of average height, and its position on the shore admitted of the surrounding debris being so cleared away

Fig. 11. View of Grave VII.

as to enable me to obtain a photograph which clearly shows its structure.

The characteristic features of these graves, which lead to the surmise that they may be regarded as of the Christian period, are—

1. Their orientation ;
2. Their regular alignment in rows ;

3. The extended position of the body, as opposed to the doubled-up position generally affected in the pagan usage ; and
4. The absence of grave-goods.

The resemblance of the construction of the graves (in other respects than dimensions) to the short cists of the pagan period may be noted, and may justify the further surmise that the group belongs to an Early Christian period, when pagan methods of grave construction had not entirely died out.

To refer again to the district map (fig. 1), I would call attention to the apparently ecclesiastical associations of the district, as evidenced by such place-names as—

1. Spittal Hill—Ruins of Back Spittal—Site of Hospital.
2. Friarton, Upper and Nether.
3. Monk's Rig—Monk's Road, with Font Stone—Monk's Burn—and Monk's Haugh.
4. St Robert's Croft, and
5. Newhall, with its reputed site or ruins of chapel.

None of these names in themselves carry us back beyond the 11th century, and I need not take up further time and space with them, beyond referring to the 33rd volume of the Society's *Proceedings*, where Mr Coles, in describing the so-called Font Stone of the Monk's Rig (in reality the socketed base of a wayside cross), has set forth at some length what is apparently most of the information that may be gained from references in printed books to the ecclesiastical history and tradition of the neighbourhood.

I would, however, supplement Mr Coles' remarks on the subject with the two following extracts from Dr Pennecuik's *Description of Tweed-dale*, already referred to, on pp. 124 and 125 of which it is stated that—

"North from Patie's-hill is the Wester-Hill of 'Spital, the most verdant, smooth, and beautiful of all the Pentland Range . . . . a short way up this hinder part of the hill are the foundations of some buildings, called in old writings the Back 'Spital, sheltered from the north by the Peat-rig, about the middle of the distance between the Doit-Burn and that of Fairlie-hope. . . .

"At the foot of the Monk's Burn, where it joins the Esk, is a holm called the Monk's Haugh. . . . New-Hall appears once to have been a religious house belonging to the wealthy order of the Cistertians, and to have held most of the surrounding district; and the lands of the 'Spitals seem to have been hospital lands endowed for sustaining the hospitals under the care and management of the religious foundation of New-Hall. Besides being a receptacle for the sick and superannuated, the Spitals were probably each a Hospitium or Inn, and with the road and its fonts and crosses, which also served as landmarks, an accommodation for travellers passing from one monastery to another, the Back 'Spital suiting such as went by the north side of the hills."

Possibly the graves may be of earlier date than the neighbouring ecclesiastical foundations; and though the link (if link there is) may be of the slenderest description, I think it is desirable at least to connect this notice with Mr Coles' summary, because the Back Spital lies only half a mile down the valley from the graveyard; and when the history of the Back Spital is ascertained in fuller detail (as it may yet be from the discovery of the "old writings" referred to in Dr Pennecuik's book), the presence in such close proximity to it of the graveyard may perhaps be a feature of some importance.

## III.

## NOTES ON A WAX MEDALLION, AND RELATIVE AUTOGRAPH LETTER, OF PAUL JONES, PRESENTED TO THE SOCIETY IN 1860, AND NOW IN THE NATIONAL MUSEUM OF ANTIQUITIES. By FRANCIS CAIRD INGLIS, F.S.A. Scot.

The medallion, which is circular in form, is mounted in a heavy brass frame, and measures $3\frac{1}{8}$ inches in diameter over all. It is a very fine piece of workmanship executed in wax (or some composition closely resembling wax), probably by Jean Martin Renaud, engraver and modeller, and gives us a very good idea of the man at the age of 39, representing him in court uniform, and showing the order of Military Merit.

There can be no doubt as to the portrait being an authentic one, as Paul Jones sent it to a lady (Mrs Belshes) in Scotland along with the following letter (fig. 1) dated 1786 :—

Paris, *August* 29, 1786.

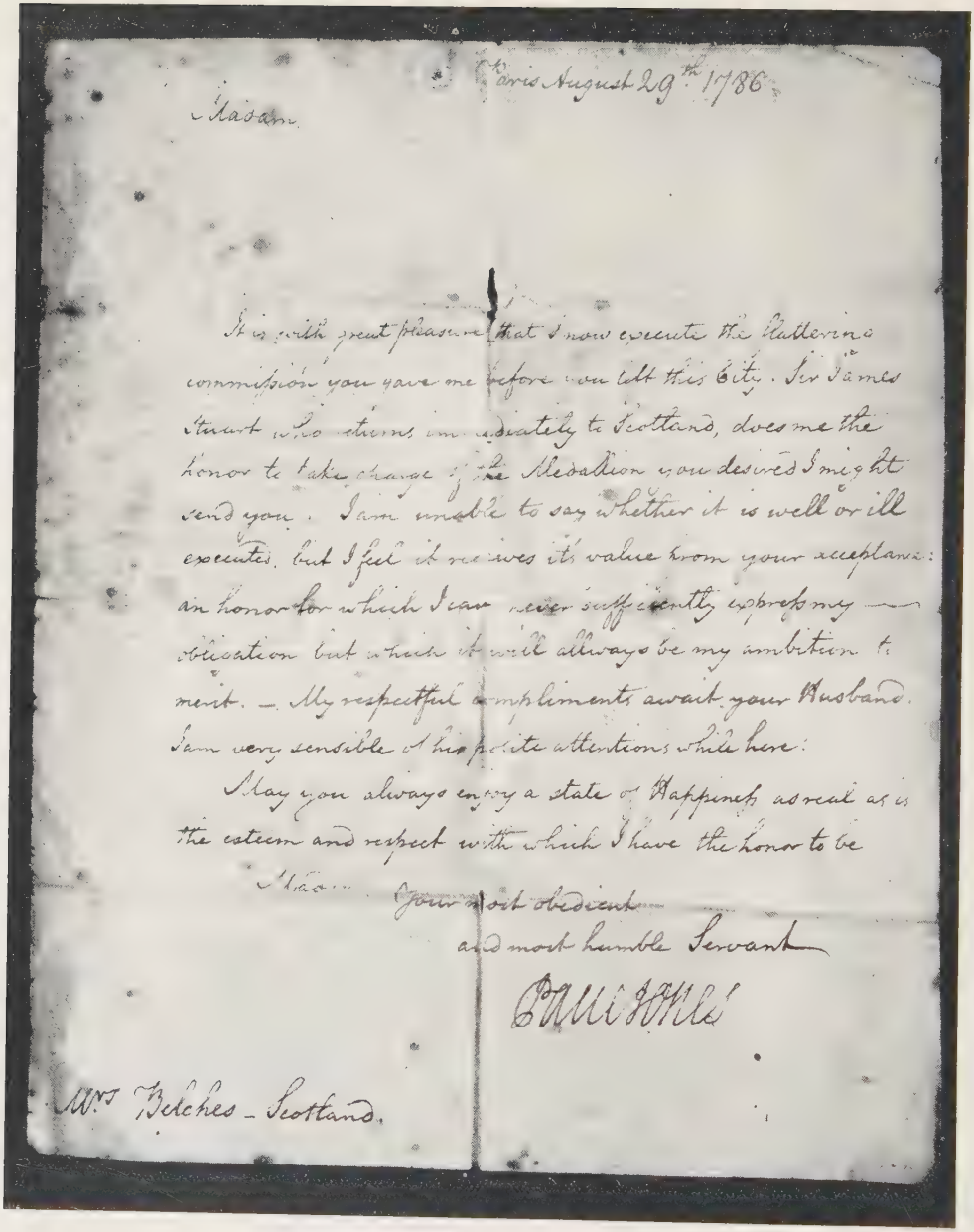
Madam,—It is with great pleasure that I now execute the flattering commission you gave me before you left this city. Sir James Stuart, who returns immediately to Scotland, does me the honour to take charge of the medallion you desired I might send you. I am unable to say whether it is well or ill executed, but I feel it receives it's value from your acceptance ; an honour for which I can never sufficiently express my obligation, but which it will allways be my ambition to merit. My respectful compliments await your husband. I am very sensible of his polite attentions while here.

May you always enjoy a state of happiness as real as is the esteem and respect with which I have the honour to be, Madam, your most obedient and most humble servant, J. Paul Jones.

Mrs Belches, Scotland.

The following note from Professor A. Campbell Swinton, F.S.A. Scot., serves to trace how the medallion came to the Museum, with the autograph letter which accompanied it : [1]—

[1] *Proceedings*, vol. iii. pp. 389–391.



Paris August 29th 1786

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May you always enjoy a state of Happiness as real as is the esteem and respect with which I have the honor to be

Madam

Your most obedient
and most humble Servant

Paul Jones

Mrs Belches — Scotland.

Fig. 1. Facsimile of Letter from Paul Jones (slightly reduced).

"I can tell you little about the medallion of Paul Jones beyond what is contained in the autograph letter from himself, which was presented along with it to the Society of Antiquaries (in 1860), and which is perhaps the greater curiosity of the two. The letter is addressed to Mrs Belshes, whose husband was a kinsman of the Inveraray family. She was a Miss Buchannan of Drumpelier, aunt to Mrs Graham, wife of Dr Graham, our late Professor of Botany, with whom she lived during her widowhood, and in whose house she died about 1840 (in Great King Street). The medallion and letter were

Fig. 2. Medallion of Paul Jones.

given by Mrs Belshes to my father, and have been in my possession for twenty or thirty years."

Comparing the medallion (fig. 2) with other portraits, it has much in common with the miniature on ivory by Van der Huyt (1780), the bust (fig. 3) by Houdon (1783), the medal by Dupré (ordered by the Congress in 1787), the prints in the British Museum, London (published 28th October 1779), two small engravings in the Scottish National Portrait

Fig. 3. Bust of Paul Jones, by Houdon (1783).

Gallery, one of which is given in fig. 4, the painting in oil by Charles Wilson Peale, and the engraving by J. M. Moreau (fig. 5), designed from the life in 1781, which all show the same regular features, the nose slightly enlarged at the point, and the fine lines of the mouth—the face of a student rather than a fighter. These

Fig. 4. Engraved Portrait of Paul Jones in the National Portrait Gallery.

portraits are very different from the old chapbook pictures and the numerous engravings of the "pirate" Paul Jones, all of which are caricatures.

The British view of Jones has always regarded him as a rebel and a pirate. Certainly he was not a pirate, as he held a commission in the American navy; and his actions against this country were all (in his

estimation) to further the cause of liberty, and to help his adopted country to gain independence.

A student from his earliest years, he soon acquired an extensive

Fig. 5. Engraved Portrait of Paul Jones, by J. M. Moreau (1781).

knowledge of his profession, and was ever eager to add to it. His letters show the command of language he had; his knowledge of French was perfect, and stood him in good stead during his service in Russia; he was also a diplomat of the first order, a friend of Franklin,

Jefferson, Lafayette, Morris, and many other distinguished men of the period.

Paul Jones, or rather John Paul, was born of quite humble parents in Kirkbean,[1] in Kirkcudbrightshire, on the 6th of July 1747. The cottage recognised in the locality as his birthplace is shown in fig. 6.

His father, John Paul,[2] was gardener to Mr Craik of Arbigland.

Fig. 6. Cottage in which Paul Jones was born. From a Photograph by J. Masterson, Dumfries.

From his earliest years young John Paul had great love of the sea and shipping; we find him in 1759, at the age of 12, engaged as an apprentice on board a small trader of 148 tons; in 1764 he is second

[1] I find no record of his birth in the register of this parish: the only entries of births in the Paul family are of three girls, in 1739, 1741, and 1749.

[2] A stone erected in Kirkbean churchyard bears the following inscription:—"In Memory of John Paul, Senior, who died at Arbigland the 24th of October 1767. Universally esteemed. Erected by John Paul, Junior."

mate, and in the following year first mate. In 1766–1767 he was occupied in the slave trade; however, after two voyages he refused to go a third time, as he was disgusted with his experiences. This fact is worth notice, as lending no support to the British view of his character, which made him out to be one of the most inhuman of men. In later years, after he had inherited his brother's estate in Virginia, he is found giving the slaves on the estate their freedom, again showing that his character was not deficient in sympathy for his fellow-creatures. In 1768 he was in command of a trader, the 'John,' and commanded this vessel for three voyages, visiting his brother William at Rappahannock twice during this time. This brother had been adopted by a well-to-do and childless Virginia planter named William Jones, a native of Kirkbean, and a distant relative of the Paul family, when in 1743 he was on a visit to his native place; and William Paul, by virtue of this adoption, took the name William Paul Jones.

Old William Jones, who died in 1760, had made John Paul the residuary legatee of his brother in case the latter should die without issue, on condition that John Paul should assume the name Jones as his brother had done. Accordingly, when William Paul Jones died in 1773, John Paul became John Paul Jones, and fell heir to a plantation of about 3000 acres, 20 horses, 80 head of cattle, and a sloop of 20 tons. He spent two years of his life on the plantation, and these years saw the beginning of the struggle for the independence of the American States. In 1775 he sailed to New York, and while there wrote to various members of Congress, offering his services and the use of his seafaring knowledge. On 24th June 1775 he was invited to join the Provisional Marine or Naval Committee, in which he at once assumed the leading position, and led the committee so completely that it is now quite impossible to identify the other four merchant captains who were his colleagues, except one—Nicholas Biddle, of Philadelphia.

This committee founded the navy of America, and on 22nd December 1775 Jones was the first to receive his commission. He was put in command of the 'Alfred,' and ordered "to break her pennant." Obeying

this order, Paul Jones flung out to the winds the first American flag ever shown on a regular man-of-war. This was not the Stars and Stripes, but the Pine Tree and Rattlesnake emblem, with the motto "Don't Tread on Me." Though he had the honour of first hoisting it aboard ship, Jones never fancied this emblem. Some time later, in one of his journals, he said of it, "I was always at a loss to know by what queer fancy or by whose notion that device was first adopted. For my own part I could never see how or why a venomous serpent could be the combatant emblem of a brave and honest folk fighting to be free. Of course, I had no course but to break the pennant as it was given to me. But I always abhorred the device, and was glad when it was discarded for one much more symmetrical as well as appropriate, a year and a half later."

Paul Jones was granted a commission as captain in the navy, October 1777. On 14th June 1777 Congress passed the following resolutions :—

"1. Resolved: That the flag of the thirteen United States of America be Thirteen Stripes, alternate Red and White: That the Union be Thirteen Stars in a Blue Field, representing a new constellation.

"2. Resolved: That Captain John Paul Jones be appointed to command the ship 'Ranger.'"

When Jones received the new flag he was delighted. He used to say, "That flag and I are twins; born the same hour, from the same womb of destiny, we cannot be parted in life or death. So long as we can float, we shall float together; if we must sink, we shall go down as one."

The cruise of the 'Ranger' in 1778 was marked by events of special note. On the 22nd April Paul Jones put into Whitehaven in Cumberland, and going ashore in two ship's boats he entered the harbour in the early morning. Jones himself landed with a few men, clambered over the rampart of the half-ruined battery supposed to defend the harbour, spiked the old guns with which it was armed, and captured the pensioners who garrisoned it, asleep in their beds. There were some three hundred boats in the harbour, all aground at low-water, and he had ordered his lieutenant to set them on fire, but this had not been

done. It was now daylight; the alarm had been given, and the townsmen were gathering in numbers that might be dangerous, so that Jones, after another hurried and futile effort to burn the boats, was obliged to retreat. He sailed for the north shore of the Solway and anchored in Kirkcudbright Bay, and, with a party of men, landed on St Mary's Isle, intending to kidnap the Earl of Selkirk and hold him as a hostage. The Earl, however, was absent. Jones's men insisted on their right to plunder, and his lieutenants backed up the men. Unable to restrain them, he allowed them to go up to the house, where the officers seized some of the family plate. As Jones did not wish to retain this booty, he purchased the whole of it from the captors and restored it to the Earl. The cost of buying the plate and its carriage from France amounted to £140. This incident helps to show that Jones was no pirate, as he was ever depicted by the English.

On the 24th of April 1778 Paul Jones engaged in the first naval battle fought under the Stars and Stripes, when he conquered His Majesty's ship 'Drake' off Carrickfergus in Ireland. This was the first instance in modern naval warfare of the capture of a British man-of-war by a ship of inferior force. In that respect it broke a record that had been inviolate since the beginning of regular navies, and announced to the world the advent of a new naval power.

Early in August 1779 Jones sailed from the Isle of Groaix, on the French coast, bound on a cruise round the British Isles. He was in command of a small but fairly good squadron, consisting of his flagship the 'Bon Homme Richard,' 42 guns; the 'Alliance,' 36 guns, Captain Pierre Landais; the 'Pallas,' 30 guns, Captain Cottineau; and the 'Vengeance,' of 12 guns. The conduct of the captain of the 'Alliance' during the whole cruise was disgraceful; and instead of being a help to Jones, he was a hindrance in all his engagements. It is even on record, in the engagement between the 'Bon Homme Richard' and the 'Serapis,' that Landais fired on the 'Bon Homme Richard,' killing and wounding a number of the crew. Of this episode Jones says, in his report to Dr Franklin, "At last the 'Alliance' appeared, and I now

thought the battle at an end; but, to my utter astonishment, he discharged a broadside full into the stern of the 'Bon Homme Richard.'"

The squadron sailed northward along the west coast of Ireland and the west coast of Scotland as far as the Fair Isle, north of the Orkney Islands, then south along the east coast of Scotland, entering the Firth of Forth, with the intention of laying under contribution or reducing to ashes the town of Leith. The details will be best given in his own words when writing to Dr Franklin:—

"The winds continued to be contrary, so that we did not see the land till the 13th (September), when the hills of Cheviot, in the south of Scotland, appeared. The next day we chased sundry vessels and took a ship and a brigantine, both from the frith of Edinburgh, laden with coal. Knowing that there lay at anchor in Leith Road an armed ship of twenty guns, with two or three fine cutters, I formed an expedition against Leith, which I proposed to lay under contribution, or otherwise to reduce to ashes. Had I been alone, the wind being favourable, I would have proceeded directly up the frith, and must have succeeded, as they lay then in a state of perfect indolence and security, which would have proved their ruin. Unfortunately for me the 'Pallas' and 'Vengeance' were both at a considerable distance in the offing, they having chased to the southward. This obliged me to steer out of the frith again to meet them. The captains of the 'Pallas' and 'Vengeance' being come on board the 'Bon Homme Richard,' I communicated to them my project, to which many difficulties and objections were made by them. At last, however, they appeared to think better of the design, after I had assured them that I hoped to raise a contribution of £200,000 sterling on Leith, and that there was no battery of cannon there to oppose our landing. So much time, however, was unavoidably spent in pointed remarks and sage deliberations that night that the wind became contrary in the morning."

So confident was Jones of the success of his projected attack that he had prepared a summons addressed to the magistrates of Leith, which, fortunately, he never had an opportunity of despatching. As it is an interesting and curious document, showing the terms on which Leith was to be spared, I give it at full length:—

"The Honourable J. Paul Jones, Commander-in-Chief of the American Squadron now in Europe, etc., to the Worshipful the Provost of Leith, or in his absence, to the Chief Magistrate who is now actually present and in authority there.

"Sir,—The British marine force that has been stationed here for the protection of your city and commerce being now taken by the American arms under

my command, I have the honour to send you this summons by my officer, Lieutenant-Colonel de Chamillard, who commands the vanguard of my troops. I do not wish to distress the poor inhabitants ; my intention is only to demand your contribution towards the reimbursement which Britain owes to the much injured citizens of the United States of America, for savages would blush at the unmanly violation and rapacity that has marked the tracks of British tyranny in America, from which neither virgin innocence nor hapless age has been a plea of protection or pity. Leith and its port now lie at our mercy ; and did not our humanity stay the hand of just retaliation, I should, without advertisement, lay it in ashes. Before I proceed to that stern duty as an officer, my duty as a man induces me to propose to you, by the means of a reasonable ransom, to prevent such a scene of horror and distress. For this reason I have authorised Lieutenant-Colonel de Chamillard to conclude and agree with you on the terms of the ransom, allowing you exactly half an hour's reflection before you finally accept or reject the terms which he shall propose (£200,000). If you accept the terms offered within the time limited you may rest assured that no further debarkation of troops will be made, but the re-embarkation of the vanguard will immediately follow, and that the property of the citizens will remain unmolested.—I have the honour to be, with sentiments of due respect, Sir, your very obedient and very humble servant, Paul Jones.—On board the American ship of war the 'Bon Homme Richard,' at anchor in the Road of Leith, September the 17th, 1779."

Appended to the foregoing there is the following note in the handwriting of the redoubtable Commodore :—

"*N.B.*—The sudden and violent storm which arose in the moment when the squadron was abreast of Keith Island (Inchkeith), which forms the entrance of the Road of Leith, rendered impracticable the execution of the foregoing project."

Jones obtained his accurate information regarding the inadequate defences of Leith from a Kirkcaldy skipper named Andrew Robertson, whose vessel the 'Friendship' had been captured by him.[1]

The three ships with which Jones ultimately reached the Scottish east coast had been so long in beating up the firth, that a general alarm was excited, although great uncertainty prevailed as to whether they formed part of a French fleet, or were actually the ships of the dreaded "pirate," who was known to be on the coast. Although an

[1] In the *Scots Magazine*, vol. xli., November 1779, there is given a copy of the ransom certificate or passport given by Paul Jones to the above-mentioned Andrew Robertson (see extract from *Scots Magazine* at end of this notice).

express reached Edinburgh on the 15th, announcing that the strange vessels had made several captures, no defensive preparations whatever appear to have been made, and the authorities seem to have cherished an unbounded confidence in Providence. On the 16th the hostile ships were distinctly seen from Edinburgh; and though the alarm increased, the stupor still continued. On the morning of Sunday the 17th great crowds were assembled on the Fife coast, and on the pier and shore of Leith, to witness, in utter helplessness, the proceedings of the dreaded enemy. At one time the Commodore's ship was within a mile of Kirkcaldy, and great was the alarm in the "lang toon" lest it should attract the attention of the enemy. The then clergyman, the well-known Mr Shirra, in place of proceeding to the church, where he would have had a meagre attendance, repaired to the sandy beach, and was soon surrounded by a numerous congregation. Here he prayed most fervently and earnestly, with that homely and familiar eloquence for which he was remarkable, that the enterprise of the piratical Paul Jones might be defeated, which no doubt received a hearty "Amen" from all assembled. Scarcely was the prayer concluded, the hostile ships being then abreast of Inchkeith, between that island and the Fife coast, when the violent gale, so bitterly lamented by Paul Jones, suddenly arose and drove them out to sea.

One consequence of the visit of Paul Jones was the erection of Leith Fort, begun that same year. It was at this time also that the Defensive Band or Regiment of Volunteers was raised in Edinburgh. It was called in Edinburgh the Defensive Band of Volunteers, and paraded in public for the first time on 22nd September 1781. Several hundreds of professional men, bankers, and merchants of the city joined its ranks. It was under command of the Lord Provost as Honorary Colonel and Andrew Crosbie as Lieutenant-Colonel, and had a special uniform, consisting of cocked hat, light blue coat, faced and trimmed with orange, with white breeches and black leggings. From among the members of this regiment the Masonic Lodge of Edinburgh, Defensive Band, No. 151,

was formed in 1782.[1] The Martello Tower at Leith was not built till about 1809.

After this reverse to his plans, Jones sailed southwards along the east coast of England in hopes of meeting the homeward-bound Baltic fleet, which was due about this time. The squadron eventually fell in with the fleet off Flamborough Head ; the ships, forty in number, were under the convoy of His Majesty's ships 'Serapis' and 'Countess of Scarborough.' A desperate engagement ensued, in which Jones showed the most consummate skill, dauntless intrepidity, and perfect presence of mind.

Captain Pearson of the 'Serapis,' which was one of the newest British men-of-war, carrying 44 guns, on sighting the enemy said, "It's probably Paul Jones. If so, there is work ahead." The battle commenced with a broadside from the 'Richard,' and was immediately answered with one from the 'Serapis.' John Kilby, quarter gunner of the United States ship 'Bon Homme Richard,' states that, both ships being within fifty yards of each other, no man could tell which fired first, but so it was that each ship fired a broadside. Another narrative written by a sailor gives an account of the beginning of the battle, and then adds—

"The action raged with horrible violence, and the blood ran out of the scuppers. Our rigging was cut to atoms, and finally both ships took fire, so that both friend and foe were obliged to rest from fighting that they might extinguish the flames. The 'Richard,' being old, was soon shot through and through and began to sink. In this awful condition Jones' voice was heard above the din of battle, ordering to grapple with the enemy. We accordingly made our ship fast to the 'Serapis.' It was easily done, as the two ships were so near each other that when I drew out the rammer of the gun the end of it touched the side of the 'Serapis.' Thus fastened together, we fought without resting, until nearly all our guns were burst or dismantled, the ship nearly full of water, and Lieutenant Grubb shot dead by Jones' own pistol for hauling down the colours without orders, and which happened at my elbow, our decks covered with dead and dying and our ship cut up into splinters. While in this awful and desperate situation my friend Roberts, seeing how near spent we were, climbed on to the main yard of our vessel, which projected directly over the decks of the 'Serapis,' with a bundle of hand grenades. These he contrived to throw down upon the deck of the 'Serapis,' and succeeded in blowing up two or three of their powder chests, the explosion of which killed and

[1] Historical Sketch of the Lodge of Edinburgh, Defensive Band, No. 151. By A. A. Murray, 1903.

wounded a great many men. The captain of the 'Serapis,' perceiving his activity, ordered some shots to be fired at Roberts. One of them struck the rope by which he supported himself and caused him to fall on the gunwale of the enemy's ship, which observing, I caught hold of him and pulled him aboard. He immediately got on the same yardarm with a fresh supply of hand grenades, and made such dreadful havoc on the enemy's deck that in a few minutes they surrendered. For this great bravery Paul Jones publicly thanked him the next afternoon on the quarterdeck of the 'Serapis.'"

The foregoing narrative by no means tallies with the very excellent account given in Mr A. C. Buell's *Paul Jones*. In the first place, there is no lieutenant of the name of Grubb mentioned in the roster of the crew of the 'Bon Homme Richard.' The name Beaumont Grubb, midshipman and warrant officer, appears, but he is not included in the list of killed and wounded; secondly, the name of the hero of the hand grenade incident is given by Mr Buell as "Fanning," the name "Roberts" not even being included in the ship's company.

This desperate engagement not only made Jones more famous, it marked an epoch in naval warfare, being the first and only instance in history of the surrender of a British man-of-war to a ship of not more than two-thirds her force; while the fact that the ship which surrendered destroyed the ship which conquered her is probably unique.

Jones took command of the 'Serapis,' and sailed her under jury rig into the Texel. One little incident is of interest as another indication of his character. Having to use the cabin of Captain Pearson on board the 'Serapis,' he requested Captain Pearson to make a list of his private property in the cabin, as distinguished from official or public property, so that when he was released or paroled it might be returned to him. Captain Pearson made out a list, and when handing it to Commodore Jones he said that he omitted to mention one leather case and one box, containing respectively a jewelled sword and a case of gold-mounted pistols, that had been presented to him by the corporation of the city of Bristol. "As they are weapons, sir," he said, "you have a right to regard them as forfeit to the fortunes of war, and I therefore omitted them from the list of my private property." "Add them to your list, sir," replied Commodore Jones. "I have no concern with any side arms

except those you wore in action as the insignia of your rank. Those you have handed me in due form, and I will retain them officially. But the other weapons you mention represent to you a recognition of your merit as an officer and gentleman by your fellow-countrymen, and could, therefore, be of no value to any other officer and gentleman."

Jones received the honour of knighthood from the King of France, a sword of honour, and the order of Military Merit. From Russia he received the order of St Anne. From America, Congress resolved unanimously, 16th October 1787, "That a medal of gold be struck and

Fig. 7. Medal struck in honour of Paul Jones.

presented to the Chevalier Paul Jones in commemoration of the valour and brilliant services of that officer in command of a squadron of American and French ships under the flag and commission of the United States, off the coasts of Great Britain, in the late war; and that the Honourable Thomas Jefferson, Minister of the United States at the Court of Versailles, have the same executed, with the devices." The medal (fig. 7) was struck in 1779.

I have also been favoured with a sight of the diploma granted to John Paul Jones by the Society of the Cincinnati, which is now in the possession of Colonel N. Arnott, Camberley, Surrey. It is signed by

George Washington, and bears date 31st October 1785. The Society was instituted by the officers of the American army, on its dissolution, after the peace.

A traditional incident in this encounter with the Baltic fleet off

Fig. 8. China Plate with representation of an Engagement with Paul Jones.

Flamborough Head is commemorated on a china plate in the Museum (fig. 8), representing one of the Baltic ships, the 'Crow Isle,' engaging a ship of Paul Jones's squadron. The plate was presented to the Museum by Samuel Talbot Hassell, Kingston-on-Hull, in 1871, and is described by him as part of a dinner service made for his grandfather, Francis Hall, Esq., at the newly erected pottery in Kingston, to commemorate the

beating-off of Paul Jones by the Baltic trader the 'Crow Isle' (owned by Mr Hall) off the Yorkshire coast in 1779. The singular name the 'Crow Isle' was given to Mr Hall's ship from the name of the place in the Baltic to which she traded for deals. The design on the plate represents a ship and sloop in action, and beneath are the words, "Success to the Crow Isle." There is another plate of the same dinner service in the Hull museum, and these two are probably the only ones now extant.

In April 1788 Jones took service in the Russian navy under Catherine II., and was given command of part of the Black Sea fleet, being subsequently promoted to be Vice-Admiral of the Baltic fleet, but a short experience sufficed to give him a distaste for the service, and, the severity of the climate seriously affecting his health, he retired to Paris, there to begin the last chapter of his remarkable career, the doctors there confirming what the Russian doctors had said, that his lungs were permanently affected, and that he must not risk another winter in Russia. During these last months of his life in Paris his hospitality was proverbial, his most frequent guests being revolutionists. In the spring of 1791 he visited England, and was entertained by Horace Walpole Earl of Orford, Lord Lansdowne, Charles James Fox. Lord Barham invited him to visit the dockyard at Portsmouth, which invitation he eagerly accepted, always desirous to increase his professional knowledge. This visit to England seems to have been a very pleasant one to Jones, as recorded in his journal. In March he went to Holland to hold a conference with the Russian ambassador, and in July 1791 sent in his resignation to the Empress Catherine.

A week before his death (11th July 1792) he attended the session of the Assembly. He was asked by the members to answer some questions concerning the needs of the navy, and his own ideas as to how these needs might best be met, but he begged to be excused, as he feared the effort to make himself heard. After this meeting ended, and at a very late hour, the Admiral went to sup at the favourite rendezvous of the Central Jacobin Club, and there made a most excellent speech, which excited their admiration no less than their wonder.

On the afternoon of Wednesday, 18th July 1792, he dictated his will, and shortly after was found in his bedroom dead.

His body was put into a leaden coffin on the 20th, that in case the United States, which he had so essentially served, and with so much honour, should claim his remains, they might be more easily removed; and now, after one hundred and thirteen years, the remains have been found in the subterranean vaults of the old cemetery of St Louis, unearthed on 31st March 1905.

In the *Century Magazine* for October 1905 General Horace Porter has described the circumstances connected with the recovery of the body of the Admiral, as he was styled in France.

The investigation was surrounded with difficulties at every step, which were surmounted only by extraordinary patience and perseverance. All the available sources of information were successively examined, the evidence showing that the burial took place in the cemetery of St Louis, which had been opened for the interment of foreign Protestants about 1762, and officially closed in January 1793, six months after Paul Jones's decease. This cemetery, however, had become private property, and had been completely built over in the course of the intervening century. The proprietors had to be propitiated before any operations were practicable, and finally it was arranged that the whole cemetery should be explored by a series of shafts and galleries.

In the course of these operations, which lasted over three months, there had been excavated 80 feet of shafting and 800 feet of galleries. It had been ascertained from authentic documents that Paul Jones had been buried in a leaden coffin, and that the body had been prepared for transportation to the United States. Five leaden coffins were discovered in different parts of the cemetery, but there was no great difficulty in determining that only one of these could possibly be the right one. The process of identification of the body was conducted with all the official formality and scientific certainty that was possible, and left no manner of doubt on the minds of those engaged in it. A squadron of four ships of the American navy was sent over, and on

6th July 1905 the remains were conveyed in state through Paris, to be embarked and finally deposited in the crypt of the chapel of the new Naval Academy at Annapolis, where they now rest.

In conclusion, I must express my thanks to Mr Augustus Biesel of the American Embassy at Paris, Mr Mayer of Paris, Mr Cadwallader of New York, Thomas Hunter, Esq., W.S., Town Clerk of Edinburgh, Mr Stalker, Trinity House, Leith, Mr James Caw, National Portrait Gallery of Scotland, and Colonel N. Arnott, Camberley, Surrey, for the aid these gentlemen have given me in obtaining access to prints, documents, etc.

## APPENDIX.

The correspondence between Paul Jones and the Earl and Countess of Selkirk, with reference to the return of the silver plate taken from the Earl's residence at St Mary's Isle, shows both the personal attainments and the moral character of the man in a more favourable light than almost any other incident in his career. The letters are therefore given in full.

The following excerpts from the Minutes of Trinity House, Leith, and from the Minute Book of the Town Council of Edinburgh, and extracts from *The Edinburgh Evening Courant*, *The Caledonian Mercury*, and *Scots Magazine*, show how much Jones did to annoy our coasts, and give us an idea of the preparations made for the defence and protection of property.

### I.—CORRESPONDENCE WITH THE EARL AND COUNTESS OF SELKIRK.

PAUL JONES to the COUNTESS OF SELKIRK.

'*Ranger*,' *Brest*, *8th May* 1778.

"MADAM,—It cannot be too much lamented that in the profession of arms the officer of fine feelings and real sensibility should be under the necessity of winking at any action of persons under his command which his heart cannot

approve ; but the reflection is doubly severe when he finds himself obliged, in appearance, to countenance such acts by his authority.

"This hard case was mine when, on the 23rd of April last, I landed on St Mary's Isle. Knowing Lord Selkirk's interest with the King, and esteeming, as I do, his private character, I wished to make him the happy instrument of alleviating the horrors of hopeless captivity when the brave are overpowered and made prisoners of war.

"It is perhaps fortunate for you, Madam, that he was from home, for it was my intention to have taken him on board the 'Ranger' and to have detained him until, through his means, a general and fair exchange of prisoners, as well in Europe as in America, had been effected. When I was informed by some men whom I met at landing that his Lordship was absent, I walked back to my boat, determined to leave the island. By the way, however, some officers who were with me could not forbear expressing their discontent, observing that in America no delicacy was shown by the English, who took away all sorts of movable property, setting fire not only to towns and to the houses of the rich without distinction, but not even sparing the wretched hamlets and milch-cows of the poor and helpless at the approach of an inclement winter. That party had been with me the same morning at Whitehaven ; some complaisance, therefore, was their due. I had but a moment to think how I might gratify them, and at the same time do your Ladyship the least injury. I charged the officers to permit none of the seamen to enter the house or to hurt anything about it ; to treat you, Madam, with the utmost respect ; to accept of the plate which was offered, and to come away without making a search or demanding anything else.

"I am induced to believe that I was punctually obeyed, since I am informed that the plate which they brought away is far short of the quantity expressed in the inventory which accompanied it. I have gratified my men ; and when the plate is sold, I shall become the purchaser, and will gratify my own feelings by restoring it to you by such conveyance as you shall please to direct. Had the Earl been on board the 'Ranger' the following evening he would have seen the awful pomp and dreadful carnage of a sea engagement ; both affording ample subject for the pencil as well as melancholy reflection for the contemplative mind. Humanity starts back from such scenes of horror, and cannot sufficiently execrate the vile promoters of this detestable war—

> 'For they, 'twas they, unsheathed the ruthless blade,
> And Heaven shall ask the havoc it has made.'

"The British ship of war 'Drake,' mounting twenty guns, with more than her full complement of officers and men, was our opponent. The ships met, and the advantage was disputed with great fortitude on each side for an hour and four minutes, when the gallant commander of the 'Drake' fell, and victory declared in favour of the 'Ranger.' The amiable lieutenant lay mortally wounded, besides near forty of the inferior officers and crew killed and wounded,—a melancholy demonstration of the uncertainty of human prospects, and of the sad reverse of fortune which an hour can produce. I buried them in a spacious grave, with the honours due to the memory of the brave.

"Though I have drawn my sword in the present generous struggle for the

rights of men, yet I am not in arms as an American, nor am I in pursuit of riches. My fortune is liberal enough, having no wife nor family, and having lived long enough to know that riches cannot ensure happiness. I profess myself a citizen of the world, totally unfettered by the little, mean distinctions of climate or of country, which diminish the benevolence of the heart and set bounds to philanthropy. Before this war began, I had at the early time of life withdrawn from the sea service in favour of 'calm contemplation and poetic ease.' I have sacrificed not only my favourite scheme of life, but the softer affections of the heart and my prospects of domestic happiness, and I am ready to sacrifice my life also with cheerfulness if that forfeiture could restore peace and goodwill among mankind.

"As the feelings of your gentler bosom cannot but be congenial with mine, let me entreat you, Madam, to use your persuasive art with your husband to endeavour to stop this cruel and destructive war, in which Britain can never succeed. Heaven can never countenance the barbarous and unmanly practice of the Britons in America, which savages would blush at, and which, if not discontinued, will soon be retaliated on Britain by a justly enraged people. Should you fail in this (for I am persuaded you will attempt it, and who can resist the power of such an advocate?), your endeavours to effect a general exchange of prisoners will be an act of humanity which will afford you golden feelings on a deathbed. I hope this cruel contest will soon be closed; but should it continue, I wage no war with the fair. I acknowledge their force, and bend before it with submission. Let not, therefore, the amiable Countess of Selkirk regard me as an enemy; I am ambitious of her esteem and friendship, and would do anything, consistent with my duty, to merit it.

"The honour of a line from your hand in answer to this will lay me under a singular obligation; and if I can render you any acceptable service in France or elsewhere, I hope you see into my character so far as to command me without the least grain of reserve.

"I wish to know exactly the behaviour of my people, as I am determined to punish them if they have exceeded their liberty.—I have the honour to be, with much esteem and with profound respect, Madam, etc.

"John Paul Jones.

"To the Countess of Selkirk."

### Paul Jones to the Earl of Selkirk.

"*Paris, February 12th*, 1784.

"My Lord,—I have just received a letter from Mr Nesbitt, dated at L'Orient the 4th instant, mentioning a letter to him from your son, Lord Daer, on the subject of the plate that was taken from your house by some of my people when I commanded the 'Ranger,' and has been for a long time past in Mr Nesbitt's care. A short time before I left France to return to America, Mr W. Alexander wrote me from Paris to L'Orient, that he had, at my request, seen and conversed with your Lordship in England respecting the plate. He said you had agreed that I should restore it, and that it might be forwarded to the care of your sister-in-law, the Countess of Morton, in London. In consequence, I now send orders to Mr Nesbitt to forward the plate immediately to her care.

"When I received Mr Alexander's letter there was no cartel or other vessel at L'Orient that I could trust with a charge of so delicate a nature as your plate, and I had great reason to expect I should return to France within six months after I embarked for America; but circumstances in America prevented my returning to Europe during the war, though I had constant expectation of it.

"The long delay that has happened to the restoration of your plate has given me much concern, and I now feel a proportionate pleasure in fulfilling what was my first intention. My motive for landing on your estate in Scotland was to take you as an hostage for the lives and liberty of the citizens of America who had been taken in war on the ocean, and committed to British prisons, under an Act of Parliament, as traitors, pirates, and felons. You observed to Mr Alexander that my idea was a mistaken one, because you were not (as I had supposed) in favour with the British ministry, who knew that you favoured the cause of liberty. On that account I am glad that you were absent from your estate when I landed there, as I bore no personal enmity, but the contrary, towards you. I afterwards had the happiness to redeem my fellow-citizens from Britain by means far more glorious than through the means of any single hostage.

"As I have endeavoured to serve the cause of liberty through every stage of the American revolution, and sacrificed to it my private ease, a part of my fortune, and some of my blood, I could have no selfish motive in permitting my people to demand and carry off your plate. My sole inducement was to turn their attention and stop their rage from breaking out and retaliating on your house and effects the too wanton burnings and desolation that had been committed against their relations and fellow-citizens in America by the British, of which, I assure you, you would have felt the severe consequences had I not fallen on an expedient to prevent it, and hurried my people away before they had time for further reflection.

"As you were so obliging to say to Mr Alexander that my people behaved with great decency at your house, I ask the favour of you to announce that circumstance to the public.

"I am, my Lord, wishing you always perfect freedom and happiness, etc.,

"Paul Jones."

The Earl of Selkirk to Paul Jones.

"*London, 4th August* 1785.

"Sir,—I received the letter you wrote me at the time you sent off my plate in order for restoring it. Had I known where to direct a letter to you at the time it arrived in Scotland, I would have then wrote you; but not knowing it, nor finding that any of my acquaintance at Edinburgh knew it, I was obliged to delay writing till I came here, when, by means of a gentleman connected with America, I was told Mr Le Grand was your banker at Paris, and would take proper care of a letter for you; therefore I enclose this to him. Notwithstanding all the precautions you took for the easy and uninterrupted conveyance of the plate, yet it met with considerable delays, first at Calais, next at Dover, then at London. However, it at last arrived at Dumfries, and I dare say quite safe, though as yet I have not seen it, being then at Edinburgh. I

intended to have put an article in the newspapers about your having returned it ; but before I was informed of its being arrived, some of your friends, I suppose, had put it in the Dumfries newspaper, whence it was immediately copied into the Edinburgh papers, and thence into the London ones.

"Since that time I have mentioned it to many people of fashion ; and on all occasions, Sir, both now and formerly, I have done you the justice to tell that you made an offer of returning the plate very soon after your return to Brest ; and although you yourself were not at my house, but remained at the shore with your boat, that yet you had your officers and men in such extraordinary good discipline, that you having given them the strictest orders to behave well, to do no injury of any kind, to make no search, but only to bring off what plate was given to them ; that in reality they did exactly as ordered, and that not one man offered to stir from his post on the outside of the house, nor entered the doors, nor said an uncivil word ; that the two officers stood not a quarter of an hour in the parlour and butler's pantry while the butler got the plate together ; behaved politely, and asked for nothing but the plate, and instantly marched their men off in regular order ; and that both officers and men behaved in all respects so well that it would have done credit to the best disciplined troops whatever. Some of the English newspapers at that time having put in confused accounts of your expedition to Whitehaven and Scotland, I ordered a proper one of what happened in Scotland to be put in the London newspapers by a gentleman who was then at my house, by which the good conduct and civil behaviour of your officers and men were done justice to, and attributed to your orders and the good discipline you maintained over your people.—I am, Sir, your most humble servant, SELKIRK."

## II.—FROM THE MINUTES OF THE TRINITY HOUSE, LEITH.

16*th September* 1779.—"The meeting having apprehensions of some ships turning up to be French, has agreed to call for one hundred muskets from the Castle of Edinburgh, and to divide themselves into companies of ten men each to withstand the enemy if any attempt might be made against Leith or the suburbs."

17*th September* 1779.—"A squadron of French or American ships having yesterday appeared in the firth, and been about as far up as Inchkeith, certainly with a view to cannonade the Town and burn the shipping: The meeting resolved that eleven of the members as standing first in the Sederunt should rendezvous at the Flaghouse at half-past nine o'clock this night, and to keep watch and patrole betwixt that and the Magazine in the Links all the dark of the night, and the next eleven members in the Sederunt the next night at the same place and hour, and so on in rotation till the danger is over."

## III.—FROM THE MINUTES OF THE EDINBURGH TOWN COUNCIL.

27*th October* 1779.—"The City Chamberlain to pay John Fortune the sum of five pounds steg. incurred by the Magistrates the 17th day of September last,

when there was a rumour of an invasion at Leith by a squadron of ships that appeared in the Firth.

"The Council recommend to the Lord Provost to write to His Majesty's servants, representing the defenceless state of this country, and to request proper security both by sea and land."

*Letters from Philip Stephens, Esq., Secretary of the Board of Admiralty, and Lord Stormont.*

"Sir,—Having communicated to my Lords Commissioners of the Admiralty your letter of the 23rd, requesting, in behalf of the Royal Boroughs of Scotland, that the 'Princess of Wales,' the 'Leith,' and 'Three Sisters,' armed ships, which were taken into Government service for the purpose of protecting the Scots trade betwixt the Nore and Leith Road, and from thence to Buchanness, or at least the bay of Aberdeen, may be fixed solely for that purpose, and that their commanders (as done in the last two wars) may be directed to advise with the Lord Provost of Edinburgh as to the time of their sailing and returning. In return, I am directed by their Lordships to acquaint you, for the information of the Royal Boroughs, that directions will be given agreeably to their request. —I am, etc. Philip Stephens.

"*Admiralty Office, 1st December* 1779."

"My Lord,—The Earl of Sandwich having laid before my Lords Commissioners of the Admiralty your Lordship's letter of the 29th October last, representing that the Magistrates, Town Council, and Inhabitants of Edinburgh earnestly wish to have a ship of fifty guns, a frigate, and two sloops stationed in the Road of Leith during the continuance of the war, and that their Commanders may be instructed to pay particular attention to such authentic intelligence as may occasionally be communicated to them by the Magistrates of Edinburgh: that the merchants are fully sensible of the effectual protection hitherto given to their convoys, but that it is the general opinion the above mentioned force on that station is no more than a sufficient defence against the depredations of such a squadron as lately appeared there; that the number of seamen sent from thence to the Royal Navy is a proof that the trade is not inconsiderable, and the great Levies made there for the army manifest the Zeal and Ardour which constantly animates the loyal citizens of that metropolis of one of the United Kingdoms, and that for those considerations they hope their request may be complied with; I am commanded to acquaint you that they have the greatest sense of the importance of the trade of the City of Edinburgh, and of the Zeal and Ardour which has been shown by the Magistrates and Citizens in the Levies they have made both for the Navy and Army, and that their Lordships cannot engage to station precisely the force they have requested: they may rely upon their Lordships giving them the utmost protection in their power, consistent with the other various services which have equally a claim to their attention.—I have the honour to be, etc. Philip Stephens.

"*Admiralty Office, 16th February* 1780."

"My Lord,—In my letter of the 8th November last I acquainted your Lordship that your application for further military protection for the City of Edinburgh would be examined with that care and attention which the subject deserved. I have now the satisfaction to acquaint you that His Majesty has been pleased to order the whole of the 25th Regiment of Infantry to be added to the forces allotted last year for the Protection and Defence of Scotland. There were great obstacles to this measure arising from the various exigencies of an extensive Foreign War; but the importance of the object, and the desire of guarding a place of such consequence as the City of Edinburgh against every insult or alarm, determined His Majesty to give this further proof of his constant solicitude for it's security and welfare.—I am, etc. Stormont."

*Act anent erecting a Battery as part of a Redoubt at Leith.*

21*st June* 1780.—"Bailie Thompson, from the Lord Provost's Committee, represented that yesterday Captain Fraser, chief Engineer for Scotland, laid before the Committee a plan and estimate of a Battery proposed as part of a redoubt for one hundred men, eight twenty-four pounders; with a Guardhouse for a sergeant and twelve men, a Storehouse, Powder Magazine, Shade for some pieces of field artillery, ready to be drawn out for the defence of the coast in case of need, and other accomodation, the expense of which, with purchasing the ground necessary, would amount to a sum betwixt eight hundred and nine hundred pounds sterling.

"The place proposed for this Battery is upon Mr Robertson's ground of Hillhousefield, betwixt the Citadel of North Leith and Newhaven, and by the measurement will take one acre two roods and thirty-two falls. This Battery will effectually command the range of one mile to one and a half of the Road for shipping and the entry to the harbour, and it is further proposed that a parapet for one or two guns, with a wooden platform to be erected at the end of the South Pier, which will secure the entrance to the harbour from boats attempting to enter it by surprise to burn the shipping, and also prevent them landing on the flat sands to the eastward of the pier; all which is included in the above estimate. Captain Fraser further informed the Committee that the artillery and stores to be furnished by the Board of Ordnance will amount in value to above three thousand pounds sterling; and will be sent down as soon as the assurance is given of the battery being compleated, but on no other terms. The utility of this work must be apparent, arising from the safety of the trade and Port of Leith, as well as the discouragement it will give to any attempts on this part of the coast, and must quiet the anxiety which the late alarms have given to this City and Town of Leith, as well as the neighbourhood, and the Committee submitted to the Council how the money necessary for this work was to be raised. Which being considered by the Magistrates and Council, they did thereby unanimously approve of Captain Fraser's plan and estimate; and in order to encourage so great and useful an object to this part of the Country, resolve and agree to purchase the ground at the expense of the community, provided a subscription now to be set on foot among the inhabitants of this City, Leith, and adjacent neighbourhood, can be procured sufficient to defray the remaining expense according to Captain Fraser's estimate; and recommend to the Provost's Committee to communicate the design in a proper

manner to the Judges of the Supreme Courts and also to the Public Bodies in this City Liberties, as well as to Individuals, and with power to the Committee to treat with and purchase from Mr Robertson the ground, to open subscription, and to do otherways as they shall see cause for expediting this work.

"WM. THOMPSON, *Preses.*"

*Petition of the Porters and Sawers of Leith.*

"Unto the Honble The Lord Provost, Magistrates, and Council of the City of Edinburgh, the Petition of the seven Companies of Porters and Company of Sawers in Leith, Humbly Shewith—

"That upon the late alarm of Paul Jones, your Lordship, the Magistrates, and Dean of Guild came down to Lawson's and there gave an written order to your Clerk of Leith and deputy shore-master there to summon out the whole Porters in Leith and other workmen to erect a Battery on the Sands of Leith, for which we were to be paid by your Lordship and Council. That this order was immediately put in execution, and every porter in Leith was summoned by the Town Officers of Leith to attend upon the spot, under the pains of being deprived of their badge and rendered incapable of working on the shore, and no less than one hundred and sixteen of your petitioners left our other work and wrought at this Battery till the same was finished. May it therefore please your Lordship and Council to allow your petitioners what you please for our days labour and order payment thereof. ROBERT NOBLE, *Boxmaster.*

"Small Beer, 6/
Lawson's Bill, 13/4d."

3*rd November* 1780.—"The Shore dues Committee having considered this petition, find that the facts therein set forth are true, and therefore are of opinion that the City Chamberlain should be authorised to pay the Boxmaster of the Porters five pounds sixteen shillings sterling in full of their claim, and also pay Mr Patison, Clerk of Leith, nineteen shillings and four-pence laid out on bread and drink. THO. CLEGHORN, *B(ailie).*"

## IV.—FROM THE "EDINBURGH EVENING COURANT."

*April 25th*, 1778.—"Yesterday morning an express arrived to the Lord Provost of Edinburgh, with the alarming intelligence that an American Privateer had appeared off the coast of Kirkcudbright, and that the crew had landed and proceeded to Lord Selkirk's house, which they pillaged.

"The following is a letter from one of the Magistrates of Kirkcudbright to the Provost of Dumfries, which was brought by the above express. 'This morning about ten o'clock a privateer, thought to be about twenty guns, appeared in the Bay, and have plundered the seat of the Earl of Selkirk, within a mile of Kirkcudbright, of all the silver plate, etc. We expect a visit from them on the return of the tide, as they still hover in our Bay. We are not in a state of defence, nor do we believe anything effective can be done, unless some of the King's ships had notice of them. If you had any troops,

we should be much the better of them, but I suppose all our injury will be over before you can assist us.'"

*Dumfries, April 23rd.*—"A gentleman who left Whitehaven this morning informs that a Privateer of about 260 tons burden landed two boats' crews of twenty men at Whitehaven about half-past one this morning, and called at Nicol Alison's, the first public house, standing alone on the quay, struck a light, and guarded the house, that there should be no information; went to the battery and spiked the guns; then proceeded with combustibles they brought in the boats to the ships in all parts of the harbour, in number at present about one hundred. One man of the crew happily deserted, and gave the earliest information to the town, who upon oath declares, that there are other two armed ships in the channel, and the commission of the Captains is to do all the damage possible both by sea and land; that the Captain of the said vessel is John —— late in Scotland; that they come from France (Nantz, if I remember right), and consist of American, French, Irish and British; that to his knowledge they had sunk three vessels in the channel a few days past and sent one to France; that the crew of the said vessel consists of one hundred and fifty men. The said crew that landed had carried away four lads that were guarding their ships.

"The town was not fully armed until five in the morning. About that time the two boats left the harbour and made for their ships. Three guns were prepared to bear upon her by six o'clock, but she was by that time about two miles off and they could do her no injury; when the guns were fired she changed her course and steered towards the Scots shore; about half past ten she was out of sight, steering, as is apprehended, for the Kirkcudbright shore. Expresses were at once sent to London, Liverpool, etc. A cutter was dispatched towards Ireland to give information to the frigate lying in Belfast Loch and other ports in the Channel. During their first stay at Whitehaven they set fire to eight ships, but two of them only suffered materially, and the loss is computed about £600.

"The above Privateer also sunk a vessel from Stranraer to Clyde with meal, and carried off her crew."

*April 27th*, 1778.—"The deserter, who gives his name as David Freeman, during his examination by the Magistrates and principal gentlemen of Whitehaven, gave the following information:—The 'Ranger' mounts 18 six-pounders and 6 Swivels and has upwards of 140 men; she left Brest three weeks ago, and has since that time taken or destroyed the following vessels: a ship from London with gentlemen's baggage (sent to Brest); a Brig loaden with flax-seed (sunk); a schooner loaden with Barley and Oats (sunk); a sloop from Dublin to London in Balast (sunk) all.

"The crew of the above Privateer has 40/ per month, and to be allowed a share of all prizes, such armed vessels as may be taken to be sold and the full value to be divided among the crew. The following are the names of the officers of the 'Ranger': John Paul Jones, Captain; Thomas Simpson, 1st Lieut.; Elijah Hall, 2nd Lieut.; David Cullen, Sailing Master; Samuel Wallingford, Lieut. of Marines.

"The Captain of the 'Ranger' is said to be a very passionate man, and the crew

very much dissatisfied with his conduct ; he is a native of Scotland, and served his apprenticeship on board the 'Friendship,' formerly belonging to this port ; is known to several people here, and went by the name of 'Jack Paul' ; was some time ago master of a vessel, the 'John,' belonging to Kirkcudbright ; stood a trial in London for the murder of his carpenter, and was found guilty, but made his escape."

*Valentia, County of Kerry, August 23rd,* 1779.—"I take the opportunity of informing you by express of the critical condition of our coast, as per affidavit made by seven seamen who deserted from Commodore Paul Jones' ship, who say they sailed the 1st inst. from Port L'Orient in numbers six sail." (Here follows a list of the vessels, etc.) "Jones' ship has 600 men on board. They had 2000 sea and land forces on board, with combustibles prepared for setting fire to ships or towns, but could not tell their destination : from their report we suppose it is Dingle, Limerick, or Galway. They were becalmed off the Skellings, and their boat was put out in order to keep the ship's head off the shore, which opportunity they took of making their escape, as the ships could not bring their guns to bear on the boat. Fourteen men more have since landed in search of the above ; and as the country was not prepared to receive them, they made their escape. They have given us the names of several prizes taken by them, which ships I know; and I would give it as my opinion that a 50 gun frigate would give a good account of them. The English sailors on board were prisoners taken out of a French prison. You may depend upon the truth of this ; and am, Sir, yours, etc. PETER BURREL.

"To Mr John Connel, Corke."

*September 13th,* 1779.—"Captain Strong, of the Shetland Packet, arrived at Leith this day, reports that this day se'enight, on his passage from Shetland, he saw 2 two-deckers with a brig or snow, which from their appearance he took to be French, having in tow two sloops, which he supposed to be their prizes."

*Dunbar, September 15th.*—"We are all much alarmed at the appearance of a large frigate, French built, supposed to mount 40 or 50 guns.

"The people in the town have seen just now, by the help of their glasses, a vessel taken by the French frigate, supposed to be the Carron smack. After she had taken the smack, she steered to the Southward."

*September 18th,* 1779.—"The report of several French ships of war being in the mouth of the Frith, which we announced in our last, is too well founded. After spreading a general alarm along the coast, they proceeded up the Frith, and yesterday morning early were observed nearly opposite to Leith, above the island of Inchkeith, on the north side, about four miles from Leith.

"A swift sailing cutter was sent out to reconnoitre : the cutter fell in with them, and found herself within pistol shot of a 50 gun ship. She immediately tacked and fell in with a prize they had taken in the mouth of the Frith, which she retook, but was obliged to abandon her, for a French 24 gun frigate immediately made up to her. A boy very spiritedly jumped from the prize on board the cutter, which immediately brought him to Leith. The boy was

examined by the Lord Provost, Captain Napier, etc. He says they put four soldiers, four men, and two officers on board the prize, all of whom spoke English; that the squadron consists of a 50 gun ship, a 24 gun frigate, and a brig of 10 guns. The crew said they had determined to come up to Leith Road, but they sail ill, and yesterday the wind blew violently from the south-west, which drove them down the Frith a good way below the Island of Inchkeith, and at night they were out of sight.

"The Commander of the 50 gun ship is said to be a Scotsman and to know the Coast. Seven sail originally left Dunkirk; these three parted lately from the rest in the North Sea in a gale of wind.

"This morning we had a good deal of rain, and the weather being hazy no intelligence of them could be procured; but it having cleared up towards noon, Captain Brown of the Custom House Cutter ('Princess Royal') was sent by the Commander in Chief to look after them. He was seen to the North of Inchkeith, where he remains, but has not made a signal. Every prudent precaution has been taken that the time would admit of, by erecting batteries, etc., to give them a proper reception if they attempted to land; and the inhabitants of Leith have behaved with great spirit and readiness to do every thing in their power to defend their town, about 400 being in readiness to take arms. This day several field pieces arrived in town from Perth, escorted by a party of the train of artillery."

*Ayr, September 14th.*—"A sloop that left Lairn last night came in this morning, and brings accounts of a small vessel from Liverpool to that port with salt being taken by Paul Jones about three days ago, just off the mouth of that Loch, and ransomed for 200 guineas. The people belonging to her say that Jones with his three frigates came in at the channel; the three smaller vessels of his squadron came up the St George's Channel and met the others off Tory. They were seen from the town of Lairn, where the militia turned out; and soon afterwards all went out by the North Channel. The 'Boston' frigate is just now in Loch Ryan, the 'Ulysses' at Liverpool (a new ship built there of 44 guns), and the 'Thetis' at Bristol. These, with the armed cutters on the coast, should be a match for Mr Jones's fleet."

*September 20th*, 1779.—"We are informed that a gentleman on the coast of Fife, while the above ships were in the Frith, sent a boat on board a tender requesting a small parcel of powder, in order that the appearance of defence might be made. The boat missed the tender, and, as they thought, went on board a ship of war and delivered their message, received their powder under a double receipt, one for the ship and the other for the Admiralty, with a card to the above mentioned gentleman informing him that the ship was the 'Romney' (Captain Johnstone), whose name and compliments were subjoined to the duplicate of the receipt, mentioning that they kept one of the men as a pilot for conducting them up the Frith, etc.

"It is presumed that the squadron of French ships who lately visited our Frith has now left it, as they have not been seen from Leith since Friday evening. Several vessels are also arrived in the harbour, the masters of which say they saw no ships of force. Although the squadron has been on our coasts for eight days, it is yet a matter of doubt whether they are French or

American ; however, as they were certainly enemies' ships, we are in no ways concerned at their departure."

*Dunbar, September 20th.*—"The Enemy's squadron appeared in the offing last night, and this evening their largest ship is lying to off St Abb's Head. A vessel was carried into Berwick yesterday by some fishermen, coal loaded, with several shot through her, without a living soul on board ; she is supposed to have been taken by the French squadron, and the hands carried off or forced to enter with them."

*Sunderland, September 21st.*—"The inhabitants of this place are in the greatest confusion owing to the appearance of Paul Jones' Squadron ; numbers are retiring into the country with their valuables ; post-chaises and other carriages are so much engaged that any money is offered for them. The ships continue in sight."

*Scarborough, September 20th.*—"Yesterday a ship of war and a frigate or sloop and cutter appeared about a mile off the pier, supposed to be French ; they fired at several ships, took two, and obliged two others to run into the harbour, after damaging their rigging and sails ; they then steered their course northwards. A gentleman who passed through Beverly on Wednesday says 'that the drums in the Cumberland Militia were beating to arms, and going to march to Bridlington in consequence of 700 men from Paul Jones' squadron having landed at that place.'"

*Monday, 27th September.*—"The squadron which lately visited this coast fell in with the Baltic fleet, under convoy of the 'Serapis,' of 44 guns, and the 'Countess of Scarborough,' armed ship, on the Yorkshire coast, on Friday last, when an engagement immediately began. The 'Countess of Scarborough' struck after the second broadside to a frigate of 32 or 34 guns ; and the 'Serapis,' after losing about one hundred men, was obliged to submit to the large ship and the others which attended her. The convoy dispersed, and several ran on shore near Scarborough ; none are said to be taken.

"This account was given by two people who belonged to the 'Grant of Wemyss,' taken in the Frith, and who, after the action, got into a small boat alongside the large ship while the prisoners were exchanging from our ships. A gentleman arrived at Leith brought this news. Notwithstanding the seeming authority of the above relation, we have reason to believe that it is a fiction, raised with a design to serve some malevolent purposes, as we have authority to say that no official accounts of it has reached this place, which would certainly have been the case had the story been founded in truth."

*September 29th.*—"The report of the enemy off Scarborough, though not credited, is still kept up ; and to strengthen it a letter is said to be received from a gentleman of that place, which says that the writer saw the engagement ; that it continued for four hours ; that Jones' ship was almost a perfect wreck, and must have gone to the bottom or struck to her antagonist, though of inferior force, had not the 'Alliance,' one of her associates, come to her assistance. This letter further says that all the merchant ships escaped during

the action; on the other hand, we are credibly informed that a respectable gentleman of this city is in possession of a letter from on board a ship near Scarborough, of a posterior date to the day on which the battle is said to have happened, which takes no notice of it. This circumstance, therefore, joined to the want of official information, renders the matter still doubtful."

*Hull, September 25th.*—"The 'Serapis' frigate and the 'Countess of Scarborough,' armed ship, having the fleet from the Baltic under convoy, were attacked between Flamborough Head and Scarborough by Paul Jones' Squadron, when, after a severe engagement, in which the 'Serapis' lost her main-mast, bow-sprit, mizzen-top-mast, and otherwise much shattered, as was also the 'Countess of Scarborough,' they were both taken. The merchant ships separated during the action; part took shelter on the coast near Scarborough and two are arrived at Hull. A valuable ship bound for Quebec was taken on the north of Scotland, also a letter of marque of Liverpool, and several other prizes were taken and sunk off Whitby by Jones' Squadron."

*October 2nd*, 1779.—"The following ships which sailed from Spithead in quest of Paul Jones arrived in Leith Road, viz.—the 'Prudent,' 64 guns, Captain Burnet; the 'Amphrite,' of 28 guns, Captain Byne; the 'Pegasus,' of 28 guns, Captain Bazely? the 'Medea,' 28 guns, Captain Montagu; the 'Champion,' 24 guns, Captain Hamilton. The 'Earl of Abercorn,' W. Beatson, junior, master, which came down part of the way with the last fleet from London for Leith, but parted with them to go to Sunderland to lode coals for the Baltic, was taken by Paul Jones' Squadron and ransomed for £800. The famous Paul Jones is said to have upwards of £15,000 for his share of captures during his voyage."

*October 18th.*—"A gentleman in Amsterdam, writing to his friend in Leith, says:—'You may count a very fortunate circumstance for your town and shipping that this gentleman, meaning Paul Jones, was prevented from hurting you when he was in your Frith by a strong easterly wind and the springing of a mast, as,' in a conversation I had with him in this city, he assured me that it was his intention to seize the shipping in the harbour, and to set fire to such as he could not carry off. He seems to be well acquainted with the coast, and knew there was no force there to oppose him. One of the men escaped from Paul Jones says that in the engagement with the 'Serapis' Jones, almost exhausted with fatigue, the sweat pouring off him, sat down upon the hen coup; the Lieutenant of Marines went to him and said, "For God's sake, Captain, let us strike." Jones looked at him, paused for some time, then leapt from his seat, and said, "No; I will sink; I'll never strike."'"

## V.—FROM "THE CALEDONIAN MERCURY."

*Port Glasgow, April 27th*, 1778.—"Last night Captain Crawford of the 'Cumbraes Wherry' arrived in town from a cruise, confirms all the newspaper intelligence concerning the rebel privateer on the coast; and further adds, that on Friday last the same rebel privateer of 24 nine pounders and 140

stout men, intending some mischief in Belfast Loch, went in, but finding the 'Drake' sloop of war there, stood out again. The 'Drake,' not knowing what she was, sent her boat and gang to press her hands, which the 'Ranger' took and carried along with them, and the 'Drake' followed her, and that evening engaged; and after a very hot engagement for an hour and five minutes, the 'Drake' was obliged to strike; the Captain and First Lieutenant killed, 22 men killed and wounded. She had also one of her top-masts carried away. They were so close on the Galloway coast that Captain Crawford, lying in Loch Gair, heard the firing, made loose and stood out, but before she got in sight the 'Drake' was going away with the privateer. She had taken some fishing boats on the coast of Ireland, whose crews were all put in irons during the engagement, but when it was over they were all put in boats again and sent away, and on their passage to the shore Captain Crawford intercepted them and got all the intelligence."

*Whitehaven, April 28th.*—"At the request of the Committee, the 'Hussar,' Captain Gurly, sailed from hence on Sunday night for Belfast, to inquire into the taking of His Majesty's sloop, the 'Drake'; after which, and getting what intelligence he can of the 'Ranger' privateer (or any other enemies in the Channel), he is to return and report the same. And at the request of the Committee, Captain Perry and Captain Sharpe are also on board the 'Hussar' in this necessary expedition. A vessel from the Isle of Man (arrived yesterday) brings accounts of the 'Drake' having two companies of soldiers on board; that she was taken by a privateer, supposed to be the 'Ranger.' She made a stout resistance, and in the engagement lost her bolt-sprit and fore-top-mast. Four companies of the militia are now here.

"The guns at the forts are all cleared and put into order; some are also planted on the north wall; and the present measures, it is hoped, will be persevered in till the fortifications are thoroughly completed. A committee of gentlemen is appointed, and a subscription opened for defraying whatever expenses may be incurred in the defence of the town.

"Sunday last a company of gentlemen volunteers were formed for the protection of the town, exclusive of the ten companies of seamen, etc.

"The 'Olive Branch,' Captain Angus, also arrived here yesterday morning, had spoke the 'Heart of Oak' (an English 20 gun ship), off the point of Air. Three other vessels of considerable force are also said to be in the Channel, in pursuit of the enemy. The 'Satisfaction,' armed ship, sailed from Glasgow last Thursday. The 'Thetis' frigate was to sail on Friday. Saturday last, about twelve o'clock at night, a boat full of men attempted to land at Workington. Same time a cutter stood in between the perches; but being hailed by the people on guard, who threatened to fire on them, they sheered off.

"Other alarming intelligence arrived on Sunday morning, brought by the 'Mary Ann,' Captain Robinson, from Belfast. He arrived about nine, and reported on oath that on Saturday afternoon he spoke a boat in the Loch of Belfast belonging to the 'Draper' brig of that place, who informed him that the 'Drake' sloop of war was taken on Friday afternoon and carried away to the northward. Soon after he spoke four fishing boats, who all gave the same disagreeable information, having seen the engagement between her and

three privateers, two rigged as ships, the other a brig. The engagement lasted near two hours.

"Captain Robinson further says that soon after he got clear of the Loch he saw the above ships to the northward of him, their courses hauled up and their top-sails on the cap, but at too great a distance for him to ascertain their force.

"The 'Hussar' cruiser, belonging to the Custom house at Whitehaven, fell in with the above privateer off the Point of Air last Sunday; and refusing to bring to, the privateer endeavoured to sink the 'Hussar,' but she luckily escaped, with her sails and rigging much wounded."

*Dunbar, 14th September* 1779.—"This forenoon a large ship came up from the eastward under a press of sail; when opposite this place, she fired two shots at a ship that was to windward of her, which ship hoisted an English ensign, as did the other one. I and many others suspected her to be an enemy; and the ship she brought to is either a prize she has taken or one of her consorts. If her consort, she has been looking into the Frith to see what force is there, as she was seen coming from the west of the Bass this morning before she was joined by the large ship, and this night we have received an express from Eyemouth, acquainting us that four French ships have taken, this day, two ships within a very few miles of that place, in consequence of which we are under arms, as it may perhaps be an object for them to burn our Greenland ships and other craft in the harbour. We have sixty of the West Fencibles, commanded by Captain Fergusson, who is very active and attentive in placing proper guard. But what we want much is three or four field pieces, and indeed some of these cannon should be in every seaport, as no effectual defence can be made without them. The ship that was off here was a two decker or a large frigate with some ports below, as I clearly perceived two ports open on her quarters.

"By a letter from Dunbar, dated the 11th current, we are informed of the capture of the 'Mary,' Captain Shields, belonging to that port, and bound to Marstrand, being taken and sunk, in lat. 57, O.N. This intelligence was got from a Whitehaven vessel that was taken and ransomed by the same privateer. She had taken many other vessels in the North Sea."

*Eyemouth, September 19th.*—"We were yesterday a good deal alarmed at the appearance of the three French vessels. They were observed off St Abb's Head in the morning, but, from the thickness, we could not be altogether certain of what they were till the evening, when it cleared. They stretched to the south, and keeping as near the shore as the wind, then about S.W., would allow them. A small brig, the 'Young Benjamin' of Dysart, Normand master, loaded with coals outwards, appearing from the North, and several sloops from the South, the commander of the King's boat and several of our fishing boats went out to warn them of their danger; and we are happy to inform you, they got all safe into the harbour."

*Berwick, 19th September.*—"This afternoon our fishing boats boarded a brig of about 200 tons, coal load, a little to the northward of our harbour, with no person on board, and plundered of everything. They have brought her to the

harbour mouth, but cannot get her in this night. I do suppose she is a vessel that has been taken coming out of the Frith by the privateers that have been off here some days."

*Dunbar, September 21st.*—"On Friday night the French squadron was seen off this place after they came down the Frith ; about Tynesand they lay so close with the shore that the country people imagined they were going to land immediately. They have since been descried to the Eastward, and on Saturday and Sunday much alarmed Eyemouth. Before they went up the Frith on Thursday they pursued a Sunderland brig that had come that morning from Leith ; the tide being out, the brig was unable to make the harbour, therefore went close in by the old castle. The enemy stood on and came within musket shot. The town was alarmed ; the Magistrates ordered the Drum to go through and proclaim that every man who would take arms should appear immediately. The Commanding Officer drew up the Dragoons upon the Kirkhill, and every thing was in readiness for giving Monsieur a warm reception, but when he saw this he turned about ship and steered for the Frith. The brig got into the harbour next tide, where she still lies.

"It is but justice to the inhabitants of this place to mention, they behaved exceedingly well upon this occasion. Not one of them removed from the place, although some of the country gentlemen were so panic struck as to shift their quarters. Six companies are formed amongst the inhabitants, and they are learning their exercise. Four batteries are erected ; one upon the Kirkhill, one upon the old castle, of ninepounders saved from the 'Fox' man of war, and one upon each side of the harbour. A party of Captain Napier's men arrived on Friday to manage the guns, under the command of Captain Younghusband.

"The alarm occasioned by the appearance of an enemy upon our coasts is now entirely subsided, as it seems agreed upon all hands that they have gone off. Two ships were in sight this afternoon, supposed to be the 'Emerald' and another British frigate."

*Newcastle, September 22nd.*—"The French privateers that have spread such terror with you came all the way along the coast with me, and on Sunday morning came off our harbour and took, in sight of thousands, two vessels coming in. A sloop from Hull is just arrived which they took this morning and ransomed for three hundred guineas, the only vessel they have ransomed since they went on the cruise ; owing to the two women who were passengers, and happened to be known to some of the crew who are Scots, these begged the vessel might be ransomed, that the women might be let ashore at Newcastle; and before they left them, saw them set fire to two vessels which burned to the water's edge. The master of the Hull vessel has just now been examined before the Mayor, and says it is the identical 'Paul Jones,' and that his ship carried 44 guns ; that one of the ships he took off our harbour was the 'Union' of Chatham, a fine brig, which Jones and the crew were for filling with combustibles and sending her into Shields harbour to set fire to the shipping there, which at present amounts to about two hundred and thirty sail ; that scheme, however, they laid aside, and this morning they sunk her between Whitby and Scarborough. The 'Emerald' frigate of 32 guns is come down, but dare not look at them."

"A gentleman in Shields writing to his friend in Edinburgh says:—'Yesterday this place was very much alarmed by the appearance of several large French privateers on the coast. I counted six, two of which did not carry less than 40 guns each; they captured a brig and sloop within sight, and chased a fleet of loaded colliers, which luckily escaped them by running into Stockton. They approached so near the harbour that it was expected they intended to land; the farmers drove their cattle off the coasts and several people fled from their houses. The above ships are supposed to be the French squadron that lately appeared on this coast."

*September 27th*, 1779.—"A gentleman who arrived in Edinburgh last night from Newcastle says, before he left that place it was currently reported there that several enemies' ships had fallen in with a large fleet of merchantmen from the Baltic, off Scarborough; upon the first discovery of which they had thrown out signals to their convoy, consisting of a 40 and 20 gun ships, who immediately came up and cleared the decks for an engagement, and made signals for the merchantmen to make the best of their way for the first safe port. That an engagement accordingly took place, which lasted four hours, when the convoy were forced to strike to the superior force of the enemy, and that a number of the merchantmen, to avoid being taken, had run ashore. This alarming intelligence, we are hopeful, is void of foundation in truth."

*Newcastle, September 25th.*—"Sunday morning five sail of French ships appeared off Tynemouth bar, when they took the 'Speedwell' sloop, John Watson master, with timber from Hull for this port, who gives the following account:—That on Sunday last, about four leagues off Tynemouth bar, he was taken by a two-decked ship carrying 44 eighteen-pounders, commanded by Paul Jones; a large barque carrying 34 nine-pounders, commanded by Denis Nicholas Colineau; and a snow carrying 14 nine-pounders, knows not the commander's name, nor the name of Jones' ship; the name of the barque is the 'Pallas,' the name of the snow is the 'Vengeance.' Says that the 'Pallas' was chiefly concerned in taking his sloop, and also in taking a Chatham brig called the 'Union,' just about the same time and place; that Jones and the Commander of the 'Pallas' disagreed about the said sloop and brig; that Jones proposed to make the brig a fire ship, and to send her into Shields harbour, which the Commander of the 'Pallas' would not agree to. That the Commander of the 'Pallas' proposed to ransome the sloop, as she had a woman on board big with child, which Jones would not agree to, saying his orders were to ransome none, but to burn, sink, or destroy all; but the next day, about twelve leagues off land, between Scarborough and Filay Bay, having been carried thither, the Commander of the 'Pallas' ransomed the sloop for three hundred pounds, and took the mate as hostage; and at the same time and place they sunk the brig; and Watson believes they would not have ransomed his sloop, but would have sunk her too, if he had not the woman on board. Jones had one or two and the 'Pallas' four or five English masters on board (besides a number of other prisoners) whose ships they had taken and destroyed. Watson says he understood Jones to be the Commodore, and that he had two hundred marines on board. The Commander of the 'Pallas,' by the ransome bill, styles himself thus: Denis Nicholas Colineau, of Kologuen, Captain of a man-of-war in the

service of the United States of America, and the Commander of the American frigate the 'Pallas.' The sailors belonging to those three ships of war appeared to Watson to be chiefly Frenchmen, but several of them spoke good English, and those he supposed to be Americans. They hoisted English colours, but Watson saw they had both American and Swedish colours."

*Wednesday, September 29th*, 1779.—"We are sorry to inform our readers that the capture of the 'Serapis' of 44 guns and the 'Countess of Scarborough' of 20 guns, convoy to the Baltic fleet, now gains credit. It is said that the 'Serapis' had silenced the guns of the 50 gun ship, with which she had been engaged four hours; but at the instant when it was expected she would strike, a 36 gun ship, who had fought and taken the 'Countess of Scarborough,' came up to her assistance, by which means the 'Serapis' was obliged to submit to their superior force. Under this severe and humiliating stroke, it is some consolation to reflect that the merchantmen, from the bravery of their convoy, had time to make their escape; and that there is more than a probability that our ships of war, as well as those who took them, will soon make their appearance in the British port, as the 'Prudent,' 64 guns, the 'Andromeda,' 'Pegasus,' and 'Medea,' of 32 guns each, and the 'Champion,' of 24 guns, which lately sailed on a secret expedition from Portsmouth, were destined to scour this coast, and are supposed to be in pursuit of them."

*Newcastle, September 25th.*—"The 'Prospect,' of 18 guns, Captain Cram, of this port, a light collier on her first voyage from London, was becalmed near Jones' ship for some time, when he made preparations to engage if attacked, and asking the crew if they would stand by him, they all declared to the last, and one of them said he would rather have a 36 pounder in his guts than go into a French prison. But a fresh breeze springing up he made into port and arrived safe."

*October 2nd*, 1779.—*Bridlington, September 24th.*—"I doubt not but you have heard of the alarming situation we have been in since Tuesday night; but, thank God, as yet we have only been terrified by this Paul Jones. An engagement took place at seven last night, and continued till two this morning, between the 'Serapis' frigate of 44 guns, assisted by the 'Countess of Scarborough,' armed ship of 20 guns, and Paul Jones' ship, the 'Bon Homme,' of 44 guns, with some smaller vessels, off Flamborough Head; and I am sorry to say that this rascal Jones has now with him our two ships, with their Commanders, who so distinguished themselves in a most gallant manner, though obliged at last to surrender to superior force, after having made almost a wreck of Jones' own ship. The 'Serapis' had her masts shot away. Several sailors made their escape, and have been examined this afternoon at the Key, but their stories are different as to Jones' loss; some of them say he had 140 men killed and his ship quite a wreck; they say that Jones' plan was to destroy Scarborough, Burton, and Hull, with some other places; and that he intended landing at Flamborough yesterday morning, but the sea ran too high."

*Scarborough, September 24th.*—"On Monday last Paul Jones with his fleet appeared about three leagues off this place, and, as supposed, having had

information that the East country fleet was to pass this way, kept cruising about till Thursday morning, when the Baltic fleet appeared, convoyed by the 'Serapis' frigate of 44 guns and the 'Countess of Scarborough,' armed ship, of 20 guns, the enemy not then in sight, but about half-past six in the evening they made their appearance, consisting of the ships mentioned in the annexed affidavit. At seven a most desperate engagement began, which continued till past eleven. It was observed by many that they fired sixty times in three minutes. The 'Serapis' and Jones' ship were so close in most part of the action that they might have boarded each other."

*September 24th*, 1779.—"The Examination of Thomas Berry, born at North Shields, taken upon oath before H. Osbaldistone, Esq., one of His Majesty's justices of the peace for the East Riding of the County of York.

"This deponent saith, that he was taken about eighteen months ago in the 'Hawk' letter of marque and carried into Port L'Orient; that, in hopes of getting his liberty, he entered six months since on board Paul Jones' ship, the 'Bon Homme Richard,' of 40 guns and about 350 men. That they sailed from L'Orient about two months ago, their force consisting of the 'Bonne Homme Richard'; the 'Alliance,' an American frigate of 36 guns, which last is supposed to have been taken on the coast of Ireland; that they sailed from L'Orient to the western coast of Ireland, from thence to the North of Scotland, where they took a valuable prize bound to Quebec, laden with military stores, and another prize, a letter of marque from Liverpool; also two other prizes and several colliers were sunk off Whitby. That Jones' squadron had been six days between 'Berwick' and the 'Humber,' and his declared intentions were to make a descent somewhere on the coast; that on Tuesday last he ordered all his oars to be muffled and his boats ready to be hoisted out; that on Wednesday morning the 'Alliance' and 'Pallas' joined Jones off Flamborough Head, and on Thursday evening about seven they met with the east country fleet, convoyed by a 40 gun ship and an armed ship; that the 40 gun ship engaged Jones alone for about four hours till Jones' fire ceased, having been several times on fire and very near sinking. That Jones called to the 'Alliance' for assistance, who came up and gave the 40 gun ship a broadside, which, being totally disabled, struck; that Jones' officers called to the 'Alliance' to hoist out their boats, as their ship was sinking, in one of which the deponent and six other men made their escape to Filay."

## VI.—FROM THE "SCOTS MAGAZINE," xl., 1778, and xli., 1779.

*Whitehaven, April 23rd*, 1778.—"A little before three o'clock this morning a man rapped at several doors in Malborough Street (adjoining one of the piers) and informed the people that fire had been set to one of the ships in the harbour, matches were laid in several others; the whole would soon be in a blaze, and the town also destroyed; that he was one belonging to the privateer, but had escaped for the purpose of saving, if possible, the town and shipping from destruction. The alarm was immediately spread, and his account proved too true. The 'Thomson,' Cap. Rich. Johnson, a new vessel,

and one of the finest ever built, was in a flame. It was low water, consequently all the shipping in the port was in the most imminent danger, and the vessel on which they had begun the diabolical work, lying close to one of the steaths, there was the greatest reason to fear that the flames from it be communicated to the town. But, by an uncommon exertion, the fire was extinguished before it reached the rigging of the ship; and this, in a providential manner, prevented all the dreadful consequences which might have ensued. The incendiaries had spiked most of the guns of both our batteries, several matches were found on board different vessels, and other combustible matter in different parts of the harbour. Freeman (the deserter), on his examination, declared that the party landed consisted of thirty men; that they belonged to the 'Ranger' privateer, fitted out at Piscataqua in New England, Captain Jones commander; that she mounted 18 guns besides swivels, and had on board between 140 and 150 men; that she had taken two prizes and sent them into France; and that the Captain declared that the destruction of Whitehaven was his first object, seizing the person of Lord Selkirk was the next thing he wished, after which he would sail for Brest, and on his passage sink, burn, and destroy whatever fell in his way belonging to G. Britain."

*Dumfries, April 24th*, 1778.—"Yesterday afternoon an express arrived from Kirkcudbright with accounts that an American privateer of 20 guns had landed near the Isle (St Mary's), and a party from her had plundered Lord Selkirk's house. Mrs Wood, lady of the late Governor of the Isle of Man, at present residing there, had gone, two or three days ago, on a visit to Lady Selkirk, and returned here last night. She informs that they are all well and in good spirits; and says that yesterday morning, between ten and eleven, a servant brought word that a press-gang had landed near the house. This the party from the privateer had given out, in order, as was supposed, to get out of the way all the servants and others who might oppose them. Presently between thirty and forty armed men came up, all of whom planted themselves round the house except three who entered, each with two horse-pistols at his side; and, with bayonets fixed, they demanded to see the lady of the house: and upon her appearing, told her, with a mixture of civility and rudeness, who they were, and that all the plate must be delivered to them. Lady Selkirk behaved with great composure and presence of mind. She soon directed her plate to be delivered; with which, without doing any other damage, or asking for watches, jewels, or anything else (which is odd), the gentlemen made off. There is reason to think that there were some people among them acquainted with persons and places, and in particular one fellow, supposed to have been once a waiter at an inn in Kirkcudbright. The leader of the party, who was not the captain of the vessel, told that their intention was to seize Lord Selkirk, who is now in London; that two other privateers were at hand; and that they had been at Whitehaven, where they had burnt some small vessels, but did not get done what they intended. When the affair was ended, Lady Selkirk, with her family and visitors, left the house."

*September* 1779.—"An express arrived at Dublin, August 27, with an account that Paul Jones (who in April 1778 plundered the Earl of Selkirk's house, and endeavoured to set fire to the town of Whitehaven) made his

appearance on the coast with three ships of force ; and that being in want of provisions and fresh water, he landed a number of men, who carried off a parcel of sheep and oxen, for which he bountifully paid the owners, and immediately weighed anchor without committing any sort of hostility. Seven men landed at Inveragh, Aug. 23, in the morning, who said they had escaped the preceeding night from Jones's squadron, which had sailed from France on the 10th. They had taken four prizes. At one o'clock the same day, seventeen men landed, supposed to be in pursuit of the above seven. Nine of these were taken and lodged in Tralee gaol. The squadron lay at Skellix, in full view. The Lord Lieutenant caused communicate to the board of customs the intelligence which his Excellency had received, which that board published, dated Custom House, Dublin, Aug. 27, viz. : 'That on the 24th inst. at one o'clock seven men landed at Ballinskellix, in the county of Kerry, from a frigate called the 'Bon Homme,' commanded by Paul Jones, mounting 40 guns, having in company the 'Alliance' of 36, the 'Pallas' of 32, the 'Revenge' of 12, the 'Le Grand' of 14, and a large cutter of 18 guns, having on board in all about 2000 men. The people imagine that Jones's intentions are to scour the coast and burn some principal towns, having a quantity of combustibles shipped on board the vessels in France.' According to a letter, dated Corke, August 31, Jones was then off Dingle ; and the 'Tartar' privateer, of 22 guns, then in Corke harbour, had had an engagement for an hour with one of Jones's ships, but the rest coming up, he escaped by his ship being a prime sailer. A naval armament of two two-decked ships, a frigate, and a sloop were seen for two hours, September 6th, off Lerwick in Shetland. They carried away a boat and four men from the Island of Mousa ; and after bearing down on Brassa sound, they collected their force, tacked and steered S.E.

"Expresses arrived at Edinburgh in the morning of Sept. 15, to the commander in chief, and to the board of Customs, with accounts that three ships were seen off Eyemouth in the forenoon of the preceeding day and had taken two prizes, and at the same time a ship supposed to mount 40 or 50 guns was seen off Dunbar, within seven or eight miles of the shore, and had brought to a three-masted vessel which had come out of the Frith, and carried her along with them. At five p.m of Sept. 16 they were seen from Edinburgh steering up the Frith ; and next morning they were nearly opposite to Leith, above the Island of Inchkeith. But the wind blowing violently from the south-west, they were drove so far down the Frith as to be out of sight by night. Their intention seems to have been to burn the shipping in Leith, had not the wind forced them down the frith, but proper precautions were taken to defeat such an attempt. In one day three batteries were erected, two at the citadel and one near Newhaven, on which were mounted 30 guns, besides carronades, howitzers, etc. ; the four incorporations of Leith petitioned the commander in chief for 100 stand of arms for each incorporation, which were forthwith sent them from Edinburgh castle ; parties of military and seamen were on guard all night of the 17th, and stationed upon the coast at proper places ; and the recruiting sergeants and their parties were likewise called in to do duty. All the towns upon the coast were greatly alarmed. The largest ship lay with her broadside opposite to Kirkcaldy, and was but a mile from that town. Several prizes were taken by them, some of which, after plundering, they set adrift. It was not certainly known whether these ships were

French or Jones's squadron from Ireland. The squadron, or part of it, was seen off Newcastle on the 19th or 20th, and they took several vessels. They were seen likewise from other places on the coast."

*Copenhagen, Oct.* 2. — "In consequence of a requisition by Mr Eden, envoy-extraordinary from the Court of London, the King has ordered two transport-ships, brought into the port of Bergen by a frigate calling herself one of Paul Jones's squadron, to be delivered up. The English ships above mentioned were the 'Betsy' of Liverpool and the 'Unicorn' of London, for Quebec and New York, laden on account of government. His Majesty, when he ordered those vessels to be restored with their cargoes, gave orders to stop the American corsair twenty-four hours after their departure, to prevent them a second time from being incommoded."

*Amsterdam, Oct.* 8. — "Tuesday last, Paul Jones, with the prizes the 'Serapis' and 'Countess of Scarborough,' entered the Texel, and this day he appeared on the exchange. He was dressed in the American uniform, with a Scotch bonnet edged with gold ; is of a middling stature, stern countenance, and swarthy complexion."

*Hague Gazette, Oct.* 15.—"We are desired to insert the following attestation, taken upon oath, to show how much the enemies of G. Britain endeavour by every means to set the neutral powers against that nation.

"On the 4th of October a sailor, who served on board the 'Epervier,' formerly an English letter of marque, declared, that in order to get out of prison in France he had engaged to serve on board the 'Black Prince,' of Dunkirk, commanded by Luke Ryan, an Irishman ; that on the 10th of August they pillaged eight English coasters ; and afterwards, under English colours, they plundered several Dutch vessels, although they had their colours hoisted ; that on the 8th of September they met a Danish vessel, into which Captain Ryan fired a broadside and pillaged her. The deponent also declares that on the 12th of September they met a Dutch brig, which they also plundered. The deponent further declares, in the most sacred manner, that the said Luke Ryan always hoisted English colours when he pillaged neutral vessels. The same deponent also says, that the 'Black Prince' came into Dunkirk on the 26th of September ; that Ryan was going out again in another vessel of eighteen guns ; and that the 'Black Prince' will sail again after she is repaired, under the command of one Newland, also an Irishman, and will have an American commission, but sail as a smuggler.

"Another sailor, who also escaped from the 'Black Prince,' confirmed all the above upon oath."

*Hague, November 10th.*—"Reply by the States General to a memorial presented by the British Ambassador, requesting them to stop in the Texel the 'Serapis' and 'Countess of Scarborough,' with their officers and crews and all belonging to them, which had been taken by one named Paul Jones, a subject of the King, who, according to treaties and the laws of war, falls under the class of rebels or pirates :—

"That they were informed that three frigates had lately arrived in the

Texel, namely, two French and one called an American, commanded by Paul Jones, bringing with them two prizes taken by them in the open sea, and called the 'Serapis' and the 'Countess of Scarborough,' described in the ambassador's memorial. That they have for a century past strictly observed the following maxim, and notified the same by placards, viz., that they will in no respect whatever pretend to judge of the legality or illegality of the actions of those who have, on the open sea, taken any vessels which do not belong to this country, and bring them in to any of the ports of this republic; that they only open their ports to them to give them shelter from storms or other disasters, and that they oblige them to put to sea again, with their prizes, without unloading or disposing of their cargoes, but letting them remain exactly as when they arrived; that they will not examine whether the prizes taken by the three frigates in question belong to the French or the Americans, or whether they are legal or illegal prizes, but leave all that to be determined by the proper judges; and will oblige them to put to sea, that they may be liable to be retaken, and by that means brought before the proper judge. Particularly, as his Excellency the Ambassador must own, he would have no less a right to reclaim the above-mentioned ships if they had been private property than as they have been King's ships; therefore the States General are not authorised to pass judgment either upon their prizes or the person of Paul Jones. That as to what regards acts of humanity, they have already made appear how ready they are to show them towards the wounded on board those vessels, and that they have given orders accordingly.

"At the same time it was resolved to authorise the Admiralty to order matters so that these five ships do put to sea as soon as possible, and that they take care they are not furnished with any warlike or naval stores but what are absolutely necessary to carry them safe to the first foreign port they can come at, in order that all suspicion of their being fitted out here may drop.

"In a few days the British ambassador presented a new memorial renewing, in the strongest and most pressing manner, his request that those ships and their crews may be stopped and delivered up, which the pirate, Paul Jones of Scotland, who is a rebel subject and a criminal of the state, has taken.

"To this, answer was returned:—

"That the States General find themselves under the necessity of beseeching his Majesty to believe that they still continue in their old maxim of rigid neutrality; and that, without concerning themselves with any decision respecting the legality or illegality of the capture of those prizes brought into their ports, they will compel them to put to sea; that they issued, immediately on the entry of Paul Jones into their harbour, a strict order that he should not be supplied with any species of military ammunition, nor any other article of any kind, excepting only such as were necessary for him in going to sea again, and for his reaching the first port where he could be received; that they will likewise give orders for him to depart as soon as his vessels are in a condition to put to sea and there is a favourable wind; and will even force him to obey this injunction, in case there should be any occasion."

*Hague, Nov.* 25.—"We are informed that the cities of Dordtrecht, Haerlem, Amsterdam, Rotterdam, Schiedam, and the Brille, particularly the third, have protested highly against the contents of the above answer, and

have even had their protestations registered in which they required that the expression 'to oblige Paul Jones by force to sail, if he would not do it by fair means,' should be erased from the said answer, as being incompatible with the dignity of the republic, and may in future be prejudicial to it. But the corps of Nobles and the other towns reported that it was not time now to be taken up with such minutiæ ; and persisted that the answer should be delivered to the English ambassador as it was ; for which there was also a majority of voices in the assembly.

"We are favoured with the following copy (spelled exactly as in the original) of a ransom certificate or passport by Paul Jones to Andrew Robertson, master of the ship 'Friendship' of Kirkcaldy, which was taken the 14th of September going out of the firth with a cargo of coals, and the master and crew kept prisoners by Jones till late at night of the 17th, being the day on which he came near to Inchkeith, and was driven back by a violent south-west wind, when he thought proper to ransom the ship. The passport is of the hand-writing of a marine-officer, and subscribed by Jones. It is observable that Jones calls his squadron American, without the least mention that any of his ships belonged to France.

> "L'Honourable Capitaine John Paul Jones, Ecuyer, commandant en chef l'escadre Americaine actuellement en Europe,
>
> "A tous ceux qui ces presentes verront, specialement les sujets de la France.
>
> "Je certifie par le present passeport, que le vaisseau 'Friendship,' commande par Andre Robertson, du port de Kirkcaldy ; et venant du dit lieu pour aller a Riga, a ete pris par l'escadre Americaine que je commande ; et qu'il est ransonne : C'est pourquoi je prie et requerre tous les sujets de la France et de l'Amerique, de laisser liberement passer le dit vaisseau 'Friendship,' et continuer son voyage sans le troubler en façon quelconque.
>
> "Donne a la mer, a bord du 'Bon Homme Richard,' le dix-sept September Mil sept cent soixante dix neuf. J. PAUL JONES."

*Official Report by Paul Jones of the Engagement off Flamborough Head.*

John Paul Jones gave the following account of his engagement with the 'Serapis,' in a letter dated on board the 'Serapis,' in the Texel, Oct. 3, 1779, to Dr Franklin, at Passy :—

"On the 23rd of September we perceived a fleet, still keeping my station at Flamborough-head, to the N.E. I was determined to abandon the ships which lay at anchor in Burlington bay, and hoisted the signal for a general chase. The fleet itself now very well perceiving that we bore towards it, the merchantmen belonging to it made all their sail to the shore, whilst the two ships of war that attended them for convoy drew off from the coast and put themselves in a disposition for commencing an attack. As we approached the enemy with our sails out, I made the signal for forming the line of battle ; but with all my eagerness to bring about an engagement, I could not come up with the Commodore's vessel till near seven in the evening. When I came within pistol-shot he hailed the 'Bon Homme Richard,' which I answered

with a complete broadside. The engagement immediately commenced, and was carried on on each side with equal violence and fury, each party using the while every possible manœuvre to work himself into the most advantageous position for annoying the enemy. I am compelled to acknowledge that the enemy's vessel by various manœuvres, infinitely superior to those of the 'Bon Homme Richard,' gained sometimes the advantage of situation, in spite of every effort I could make to the contrary. Being engaged with an enemy very much my superior, I found myself under a necessity of being as close as I could, to compensate as much as possible for the inferiority of my strength. My intention was to place the 'Bon Homme Richard' plump in front of the enemy's vessel; but as this operation required much address in the manner of managing and governing our sails, and as some of our yard-arms were by that time gone, I could not succeed in this scheme in the full extent I at first intended. The bow-sprit of the enemy happening, however, to come within a little of the stern of the 'Bon Homme Richard,' I availed myself of this opportunity to fasten the two vessels together; and the wind at the same time upon the enemy's ship having her stern plump abreast of the 'Bon Homme Richard,' the two ships met almost in all their parts, their yards blended with each other, and the mouths of their cannon respectively touched the decks of each vessel. It was about eight in the evening when this circumstance took place. At this time the 'Bon Homme Richard' had received several eighteen-pounders under water, and consequently leaked considerably. My battery of twelve-pounders, upon which I built most, being served by French and American sailors, were entirely silenced and abandoned. As for the six old eleven-pounders, which formed the battery of my first deck, they did me little service: they only fired eight times in all; and at there being first fired two of them burst, and killed almost all the men appointed for their service.

"Before this, Col. de Chamillard, who commanded a party of 20 soldiers placed on the poop, had abandoned his post, after having lost all his men except five.

"I had now only two nine-pounders that were in condition to fire; these were placed in the poop, and during the whole of the action we made use of but one large cannon. Mr Mease, the purser, who had the charge of the guns on the poop, having received a dangerous wound on the head, I was obliged to officiate in his stead. I had a great difficulty in rallying some of our men; but having succeeded in drawing our cannon from the leeward battery, we had now three nine-pounders to play upon the enemy. During the whole engagement the fire from this small battery was seconded only by that of our men from the masts, where Lieutenant Stock commanded. I directed the fire of one of the three cannon, charged with bullets, against the enemy's main-mast; while the two others, which were well supplied with case shot, were employed in endeavouring to silence their musketry and clear their decks, which they at last effected. I learn that at this instant the enemy was upon the point of asking quarter, when the cowardice or perfidy of three of my sub-altern officers induced them at the same time to ask it of the enemy. The English commander asked me if I demanded quarter; and upon being answered in the most determined manner in the negative, the combat was renewed with redoubled fury. They were not able to keep their decks; but the fire of their cannon, particularly of their lower tier, consisting entirely of eighteen-pounders, was incessant. Both vessels were on fire in several places,

and the spectacle which they exhibited was frightful beyond description. In order to account in some measure for the timidity of the subaltern officers, that is to say of the master, carpenter, the head gunner, and the captain of the soldiers, I ought to observe that the two first were dangerously wounded; and as the ship had received several shots below water, so that they were obliged to keep pumping almost incessantly, the carpenter was apprehensive of her sinking, in which opinion the two others concurring, the head gunner ran, without my knowledge, to the poop, in order to strike the flag: happily for me a shot long before had done the office in carrying away the ensign, so that he was obliged to call for quarter. During all this time le 'Bon Homme Richard' sustained the engagement alone, and the enemy's ship being far superior in force, could easily have disengaged herself at first, as appeared by their own acknowledgement; and which they could have effected at last, had I not taken care to lash it firmly to the 'Bon Homme Richard.' At length, between nine and ten in the evening, the 'Alliance' appeared, and I concluded the engagement at an end, when, to my great astonishment, she fired a broadside in the rear of our ship. We then intreated them, for God's sake, to desist. She nevertheless continued her fire. We then threw our signals, three lanthorns in a horizontal line—one in the front, one in the rear, and one in the middle of the ship. We all cried with one voice, to inform them of their mistake. But nothing had any effect: she passed us, still continuing firing; one of her broadsides killed eleven of my best men and wounded a good officer. My situation was now deplorable indeed: the 'Bon Homme Richard' received several shots below water from the 'Alliance'; the pumps were not sufficient to carry off the water, and the flames kept increasing on board the two vessels. Some officers, of whose courage and integrity I had no doubt, attempted to persuade me to yield; the captain, unknown to me, released all the prisoners; and it must be confessed that my prospect began to be truly dreadful; but I was determined not to submit. The enemy's main mast began to totter, the fire on board their ship began to abate, while, on the contrary, ours gained ground. At last, however, between ten and eleven in the evening, their ship struck her colours. The ship was the 'Serapis,' man of war, commanded by the brave commodore Pearson, a new vessel, mounting 44 guns, built in the new style, having two batteries, the lowest of which consisted entirely of eighteen-pounders.

"I had now remaining two enemies yet more formidable than the English, fire and water. The 'Serapis' was attacked only by the first, but my ship was assailed by them both. There was six feet of water in the hold; and though the wind was moderate, we could hardly, with the three pumps we had left, prevent it from increasing; while the fire, in spite of all our efforts, extended itself till it reached the powder-room. I caused the powder to be carried upon deck, that it might be ready to throw overboard in case we were driven to extremities. It was not till the next day that the fire could be got under.

"As to the condition of the ship in other respects, the rudder was entirely carried away, the bars of the ship were nearly shot away, and all the woodwork in general, from the main mast to the stern-post, which had been previously considerably damaged by the weather, were so broken that it was impossible to determine the actual degree of injury they altogether sustained, and nothing less than ocular testimony could give a true idea of all the various ruin and destruction which this single day had produced. Humanity shudders

at the prospect of such peculiar horrors, and issues a groan at the reflection of the sad and terrible effects which arise from war. When the carpenters and others of judgment in these matters had inspected the vessel, which operation was performed about five in the evening, they gave that report unanimously, that it was impossible to keep the 'Bon Homme Richard' afloat for such a time as would be necessary for making any harbour or coast, and that the attempt would be dangerous should the wind increase the smallest degree in the world. I was, however, determined, if it was possible, to keep the 'Bon Homme Richard' afloat and to conduct it into some port; with that view the Lieutenant of the 'Pallas' was placed with a party of men to serve the pump, and with boats in readiness to receive the crew in case it was impractible to save it. In the meantime the wind increased during the night, and on the morning of the 25th it appeared plainly impossible to hinder this good ship from going to the bottom. The men did not abandon it till nine o'clock. The water then rose to the upper deck, and a little after ten, with a concern which no words can express, I entirely lost sight of her. No person perished with the vessel, but it was impossible to save any of the provisions. I lost with her the greatest part of my cloaths, money, and papers. Most of my officers have lost their cloaths and effects.

"Capt. Cottineau had an engagement with the 'Countess of Scarborough,' and took her after an hour's contest. The 'Countess of Scarborough' is an armed vessel mounting 20 guns, six-pounders, and was commanded by the Lieutenant of the King's ship.

"I forgot to tell you, that immediately after the captain had come on board the 'Bon Homme Richard' the middle mizen and scuttle mast of the 'Serapis' fell into the sea."

*Official Report by Captains Pearson and Piercy of the Capture of their Ships by Paul Jones.*

*Admiralty-office, October* 12.—"A letter from Capt. Pearson of his Majesty's ship 'Serapis,' to Mr Stephens, of which the following is a copy, was yesterday received at this office:—

"'Pallas,' French frigate in Congress service, Texel, October 6, 1779.

"'Sir,—You will be pleased to inform the Lords Commissioners of the Admiralty that on the 23rd ult., being close in with Scarborough, about eleven o'clock, a boat came on board with a letter from the bailiffs of that corporation, giving information of a flying squadron of the enemy's ships being on the coast, and of a part of the said squadron having been seen from thence the day before, standing to the southward. I made the signal for the convoy to bear down under my lee, and repeated it with two guns; notwithstanding which the van of the convoy kept their wind, with all sail, stretching out to the southward from under Flamborough head, till between twelve and one, when the headmost of them got sight of the enemy's ships, which were then in chase of them. They then tacked, and made the best of their way under the shore for Scarborough, etc., letting fly their top-gallant sheets and firing guns; upon which I made all the sail I could to windward, to get between the enemy's ships and the convoy, which I soon effected. At one o'clock we got sight of the enemy's ships from the masthead, and about four we made

them plain from the deck to be three large ships and a brig; upon which I made the 'Countess of Scarborough' signal to join me, she being in shore with the convoy; at the same time I made the signal for the convoy to make the best of their way, and repeated the signal with two guns; I then brought to, to let the 'Countess of Scarborough' come up, and cleared ship for action. At half-past five the 'Countess of Scarborough' joined me, the enemy's ships then bearing down upon us, with a light breeze at S.S.W.; at six tacked and laid our head in shore, in order to keep our ground the better between the enemy's ships and the convoy; soon after which we perceived the ships bearing down upon us to be a two-decked ship and two frigates; but from their keeping end on upon us, on bearing down we could not discern what colours they were under. At about twenty minutes past seven the largest of the three brought to, on our larboard bow, within musket shot. I hailed him, and asked what ship it was. They answered in English, 'The Princess Royal.' I then asked where they belonged to. They answered evasively; on which I told them, if they did not answer directly, I would fire into them. They then answered with a shot, which was instantly returned with a broadside; and after exchanging two or three broadsides, he backed his top-sails, and dropped upon our quarter within pistol-shot, then filled again, put his helm a-weather, and run us on board upon our weather quarter and attempted to board us; but being repulsed, he sheered off; upon which I backed our top-sails in order to get square with him again, which as soon as he observed, he then filled, put his helm a-weather, and laid us athwart hawse; his mizzen shrouds took our jib-boom, which hung him for some time, till it at last gave way, and we dropped alongside of each other, head and stern, when the fluke of our spare anchor hooking his quarter, we became so close fore and aft that the muzzles of our guns touched each other's sides. In this position we engaged from half-past eight till half-past ten, during which time, from the great quantity and variety of combustible matters which they threw in upon our decks, chains, and in short into every part of the ship, we were on fire not less than ten or twelve times in different parts of the ship, and it was with the greatest difficulty and exertion imaginable at times that we were able to get it extinguished. At the same time the largest of the two frigates kept sailing round us the whole action and raking us fore and aft, by which means she killed or wounded every man on the quarter and main decks. About half-past nine, either from a hand-grenade being thrown in at one of our lower deck ports or from some other accident, a cartridge of powder was set on fire, the flames of which, running from cartridge to cartridge all the way aft, blew up the whole of the people and officers that were quartered abaft the main-mast; from which unfortunate circumstance all those guns were rendered useless for the remainder of the action, and I fear the greatest part of the people will lose their lives. At ten o'clock they called for quarters from the ship alongside, and said they had struck. Hearing this, I called upon the captain to know if they had struck, or if he asked for quarters; but no answer being made, after repeating my words two or three times, I called for the boarders and ordered them to board, which they did; but the moment they were on board her they discovered a superior number lying under cover, with pikes in their hands ready to receive them; on which our people retreated instantly into our own ship, and returned to their guns again till half-past ten; when the frigate coming across our stern, and pouring her broadside into us again, without our being able to

bring a gun to bear on her, I found it in vain, and in short impracticable, from the situation we were in, to stand out any longer with the least prospect of success; I therefore struck (our main-mast at the same time went by the board). The first lieutenant and myself were immediately escorted into the ship alongside, when we found her to be an American ship of war called the 'Bon Homme Richard,' of 40 guns and 375 men, commanded by Capt. Paul Jones; the other frigate which engaged us to be the 'Alliance,' of 40 guns and 300 men; and the third frigate, which engaged and took the 'Countess of Scarborough' after two hours' action, to be the 'Pallas,' a French frigate of 32 guns and 375 men; the 'Vengeance,' an armed brig of 12 guns and 70 men, all in Congress service, and under the command of Paul Jones. They fitted out and sailed from Port L'Orient the latter end of July, and came north about. They have on board 300 English prisoners, which they have taken in different vessels in their way round since they left France, and have ransomed some others. On my going on board the 'Bon Homme Richard' I found her in the greatest distress; her quarters and counter on the lower deck entirely drove in, and the whole of her lower deck guns dismounted. She was also on fire in two places, and six or seven feet water in her hold, which kept increasing upon them all night and the next day, till they were obliged to quit her, and she sunk with a great number of her wounded people on board her. She had 306 men killed and wounded in the action; our loss in the 'Serapis' was also very great. My officers and people in general behaved well; and I should be very remiss in my attention to their merit were I to omit recommending the remains of them to their Lordships' favour. I must at the same time beg leave to inform their Lordships that Capt. Piercy, in the 'Countess of Scarborough,' was not in the least remiss in his duty, he having given me every assistance in his power, and as much as could be expected from such a ship, in engaging the attention of the 'Pallas,' a frigate of 32 guns, during the whole action. I am extremely sorry for the misfortune that has happened, that of losing his Majesty's ship I had the honour to command; but at the same time I flatter myself with the hopes that their Lordships will be convinced that she has not been given away; but on the contrary, that every exertion has been used to defend her, and that two essential pieces of service to our country have arisen from it: the one, in wholly oversetting the cruise and intentions of this flying squadron; the other, in rescuing the whole of a valuable convoy from falling into the hands of the enemy, which must have been the case had I acted any otherwise than I did. We have been driving about in the north sea ever since the action, endeavouring to make to any port we possibly could, but have not been able to get into any place till to-day we arrived in the Texel. Herewith I enclose you the most exact list of the killed and wounded I have as yet been able to procure, from my people being dispersed among the different ships, and having been refused permission to muster them. There are, I find, many more both killed and wounded than appears on the enclosed list, but their names as yet I find impossible to ascertain. As soon as I possibly can, I shall give their Lordships a full account of the whole.—I am, etc. R. Pearson.

"*P.S.*—I am refused permission to wait on Sir Joseph Yorke, and even to go on shore.—Inclosed is a copy of a letter from Capt. Piercy, late of the 'Countess of Scarborough.'

"Abstract of the list of killed and wounded.
"Killed 49. Wounded 68.

"Amongst the killed are the boatswain, pilot, 1 master's mate, 2 midshipmen, the coxswain, 1 quartermaster, 27 seamen, and 15 marines. Amongst the wounded are the second lieutenant Michael Stanhope and Lieutenant Whiteman, second lieutenant of marines, 2 surgeon's mates, 6 petty officers, 46 seamen, and 12 marines."

"'*Pallas*,' *a French frigate in Congress service.*
"*Texel, Oct. 4th*, 1779.

"SIR,—I beg leave to acquaint you, that about two minutes after you began to engage with the largest ships of the enemy's squadron I received a broadside from one of the frigates, which I instantly returned, and continued engaging her for about twenty minutes, when she dropt astern. I then made sail up to the 'Serapis,' to see if I could give any assistance; but upon coming near you, I found you and the enemy so close together, and covered with smoke, that I could not distinguish one ship from the other; and for fear I might fire into the 'Serapis' instead of the enemy, I backed the main top-sail in order to engage the attention of one of the frigates that was then coming up. When she got on my starboard quarter she gave me her broadside; which as soon as I could get my guns to bear (which was very soon done) I returned, and continued engaging her for near two hours; when I was so unfortunate as to have all my braces, great part of the running rigging, main and mizzen top-sail sheets, shot away, 7 of the guns dismounted, 4 men killed, and 20 wounded, and another frigate coming up on my larboard quarter. In that situation I saw it was vain to contend any longer, with any prospect of success, against such superior force; I struck to the 'Pallas,' a French frigate, of 32 guns and 275 men, but in the service of the Congress. I likewise beg to acquaint you that my officers and ship's company behaved remarkably well the whole time I was engaged.—I am, etc. THO. PIERCY.

"To Richard Pearson, Esq.,
late Captain of his Majesty's ship 'Serapis.'"

*London, Oct. 21st.*—"The Royal Exchange assurance company have this day ordered a piece of plate of one hundred guineas value to be prepared for Captain Pearson of the 'Serapis,' and one of fifty guineas for Captain Piercy of the 'Countess of Scarborough,' as an acknowledgment for the noble sacrifice they made in protecting the Baltic fleet under their convoy."

*A Letter from the British Ambassador to Mrs Burnot, a sailor's wife at Burlington.*

"Mrs Burnot.—*Hague, Nov. 26th*, 1779.—As soon as I received your letter of the 7th instant I lost no time in making inquiries after your gallant husband, Mr Richard Burnot; and have now great pleasure in congratulating you upon his being alive and well, on board the 'Countess of Scarborough' at the Texel. I find he had been burnt with an explosion of gunpowder, but now quite recovered. He sends me word that he, as you know, could not write, and therefore hoped that I would let you know he was well, which I do with

infinite satisfaction. It will still be greater if I can get him exchanged, which I am doing my best endeavours for; but as the people who took him are sometimes French and sometimes rebels as it suits their convenience, that renders this affair more difficult than it would be if they allowed themselves to be French, because I could then settle the exchange at once. I am happy to be able to give such agreeable news to the wife of my brave countryman; and I am, very sincerely, your most faithful humble servant, JOSEPH YORKE."

## VII.—BIBLIOGRAPHY.

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## IV.

NOTES ON A SLAB WITH INCISED CRESCENTIC DESIGN, STONE MOULD FOR CASTING BRONZE SPEAR-HEADS, A CUP-MARKED STONE, HOLY-WATER STOUP, AND OTHER ANTIQUITIES IN STRATHNAVER, SUTHERLANDSHIRE. By Rev. ANGUS MACKAY, M.A., Westerdale, Halkirk.

An incised slab (fig. 1) was discovered on Angus Gunn's farm at the foot of Langdale during the spring of 1905, when they were trenching the land. It stood upright on a dry ridge, and was sunk so deeply in

Fig. 1. Incised Slab found at Langdale. ($\frac{1}{15}$.)

the ground that its upper end was about 16 inches beneath the surface. At its base lay three rough boulders, each weighing about 56 pounds, but nothing else was found, notwithstanding a careful search.

The extreme length of the slab is 44 inches, its extreme breadth is 27 inches, and it is about 3 inches in thickness. One face is smooth,

but not hewn, the other is slightly rougher. Although it was removed from the ground uninjured, and remains as it was found, it is evidently a fragment of its former self. What remains of the device—part of a concentric figure resembling the crescent symbol of the sculptured stones—is so clearly and artistically cut into the stone that the designer must have used a sharp iron tool.

Fig. 2. Half of a Stone Mould for Spear-heads found at Langdale. ($\frac{1}{2}$.)

Judging from the appearance of the edges, it looks as if the stone had been fractured vertically and horizontally, that is to say, the top part and a portion of the left side is gone. How the stone came to be planted upright in the ground so deeply after being thus fractured is a question.

The half of a stone mould for casting leaf-shaped bronze spear-heads (fig. 2) was found by Adam Mackay in gravel soil on his own land, between the foot of Langdale and the top of Skail, during the early part of 1905. The stone is soft and close-grained, and gives a sharp metallic

clink when struck smartly. It measures 5 inches in length by 2 inches in breadth. The hollow for casting is about $\frac{1}{16}$ inch below the plain surface of the mould, and a narrow channel, about $\frac{1}{16}$ inch below this second surface, runs longitudinally along the centre of the mould, getting deeper and broader as it proceeds, until at the outside edge it becomes $\frac{9}{16}$ inch in diameter. Unfortunately, when they were cleaning the stone with a sharp knife after discovery, under the impression that the longitudinal central line ought to run the whole length of the stone, a scar was made by the knife along this line from the upper or point end of the mould to the outside edge of the stone. The margin or outline of the leaf-shaped hollow was also slightly deepened in the same way; otherwise the mould is practically uninjured. The higher surface of the stone is even and well polished, so that it would lie close and flush with its missing half. Round the funnel and along the back of the stone there are unmistakable evidences of contact with molten metal. Indeed, from little pockets on the back of the stone red metallic dust can easily be picked out, but I have refrained from doing so. The stone-mould is now presented to the National Museum.

A cup-marked stone (fig. 3) was found by me in the burial-place of Grumbeg, Strathnaver, in September 1905, standing upright at the head of a grave, and showing about 6 inches above the ground. It is evidently a fragment of a larger slab: its extreme length is 20 inches, and it is about 15 inches at its broadest part. The three upper circles are $2\frac{1}{2}$ inches in diameter and $1\frac{1}{2}$ inches deep, very symmetrically hollowed out, but the fourth and lower circle is shallow and indistinct.

As the stones covering the other graves are for the most part what is called rough mountain slabs, it seems to me that this cup-marked fragment was found in its present condition elsewhere, and placed here to conveniently show a lair.

Of the pre-Reformation church at Skail, which was then the principal church of the parish of Farr, not a vestige now remains. A few years after Strathnaver was cleared of its inhabitants, say about 1825, the stones of the old church were carted away to form an embankment

against the river opposite Riloisk. The stone font was removed along with the other material, but half way between the church and the embankment it was thrown out of the cart, as the driver did not wish to see it put to such an ignominious use. It still lies on the grassy bank on which it was placed that day.

The hollow for holding the water is oblong, and gently slopes from either end to the centre, where it becomes about 3 inches deep. The

Fig. 3. Cup-marked Stone at Grumbeg. ($\frac{1}{8}$.)

longest diameter of the stone is slightly over 2 feet, and it should weigh about 2 cwts. The stone is of native grey striped granite.

I would like to take this opportunity of telling the Society of Antiquaries that there is a rich and practically unexplored field for antiquarian research in the northern half of Sutherlandshire, and that one of the richest nooks in that quarter lies along the valley of the Naver. When that valley was cleared of its inhabitants during the second decade of last century, the people up to that time had such a

dread of touching any old structure, lest they should incur the ill-will of the spirits of the ancient dead, that brochs, barrows, cairns, tumuli, etc. were left untouched. About four years ago the lower part of that valley was replanted with tenants under the auspices of the Congested Districts Board; and now that the ground is being improved in a way in which it never was before, interesting "finds" may be expected, and should be looked for. Nay, more, the old dread of ghosts is not now entertained by the new tenants, so that unless they are warned and directed, interesting structures may be ruthlessly torn down for stones to build drains, dykes, etc.

There is a plateau called Baile Margait (Margaret's town) on the west bank of the Naver, and about half a mile from its mouth, to which I would like to draw particular attention. Above it, on the rock of Ca an Duin, stands the ruins of a broch, and below it the river forms into a deep tidal pool called Pol na Marraich Mor (Lagoon of the Great Seamen). The plateau was inhabited by tenants up to about 1780, when the encroaching sand drove them away. In the spring of 1900, after a very stormy winter which blew away a good deal of the sand, I was enabled to trace out two brochs, one at the south and the other at the north end; one doubtful broch; two objects which I took to be large round houses, or more probably burial cairns; seven circular rings, which I took to be cattle-folds, all on the same model, and about 60 feet in diameter; nine smaller heaps, which looked like round houses; and nine oblong structures, some smaller and some larger, evidently the ruins of the 18th century buildings.

At the top of Carnachy (Cairn field), five miles up the Naver valley, there is a very rich collection of remains. At the north end stands the broch Dun Kealmie, at the south end the broch Dun Carnachy, and on the opposite side of the river the picturesque broch Dun Vidden. Three years ago Dun Kealmie was badly damaged in search of stones for building a bridge and a dwelling-house.

Tradition has it that a battle was fought on Carnachy, and that the mounds, etc. cover the dead. The tumuli, which lie toward the river,

are like the ordinary small burial cairns found in groups all over the country; but the long mounds, serpentine and semicircular, lying nearer the foot of the hill, cannot, in my opinion, be accounted for in that way. At any rate I have never met with similar objects on other reputed places of ancient burial. All the objects lie on an absolutely level plain at the south-west end of the haugh, under the shadow of Dun Kealmie, and separated from it by the Burn of Carnachy.

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Monday, 12*th February* 1906.

DAVID MURRAY, LL.D., in the Chair.

A Ballot having been taken, the following were duly elected:—

*Fellows.*

Rev. Canon Anthony Mitchell, M.A., B.D., Principal of the Theological College of the Episcopal Church in Scotland, Coates Hall, Edinburgh.

John A. M'Innes, M.A., F.E.I.S., Laurelbank, Leven, Fife.

*Corresponding Member.*

John Sinclair, 28 Montrose Terrace, Edinburgh.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1) By J. A. Milne, Esq., of Melgum, Aberdeenshire.

Six small flattened and rounded Discs of Quartzite about $\frac{7}{8}$ inch in diameter; one Disc of Blue Glass, about the same size, convex on the upper and flattened on the under side, and Portions of two similar Discs, broken; one similar Disc of Vitreous Paste of variegated colours, blue, red, and yellow, and Fragments of others, broken; a Piece of a Cylindrical Rod of Colourless Glass, like part of the stalk of a wine-glass; and a small

penannular Brooch of Silver, the pin bent and flattened towards the point,—all found, with several small Fragments of Iron, in a cist at Waulkmill, Tarland, Aberdeenshire. [See the previous paper by Mr F. R. Coles (vol. xxxix. p. 217), where they are described and figured.]

(2) By R. C. Haldane, Esq., of Lochend, F.S.A. Scot.

Seven oval-shaped, smoothly ground Knives of Porphyritic Stone, found together in Shetland. [See the subsequent paper by Dr Robert Munro.]

(3) By Miss Isabella Winslow.

Eight Arrow-heads of Chert and Quartz, from Middlesbro', Massachusetts.

(4) By the Parish Council of Kettle.

Mortcloth, formerly used in Kettle Parish, Fife.

(5) By Mrs John Mackay, 12 Cheyne Street.

Triple Candle Mould of Tinned Iron, from Skelbo, Sutherlandshire.

(6) By C. Ellis Stevens, LL.D., the Author.

Stevens Genealogy: some Descendants of the Fitz-Stephen Family in England and New England. Privately printed. 4to. New York, 1904.

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Historical Aberdeen: The Green and its Story. 8vo.

Historical Aberdeen: The Castle and Castle Hill, the Snow Church, the Woolmanhill, etc. 8vo. 1905.

(9) By Lieut. H. L. Norton-Smith, F.S.A. Scot., the Author.

Armorials of the County of Orkney. Illustrated by A. M. Traill. 8vo. 1902.

(10) By James Mackenzie, F.S.A. Scot., the Author.

Life of Michael Bruce, Poet of Lochleven. 8vo. 1905.

(11) By the Trustees of the Hunterian Coin Catalogue Fund.

Catalogue of Greek Coins in the Hunterian Collection, University of Glasgow. By George Macdonald, M.A., LL.D. Vol. iii. 4to. 1905.

(12) By George Macdonald, M.A., LL.D., the Author.

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(13) By the Keeper of the Records of Scotland.

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Accounts of the Lord High Treasurer of Scotland. Edited by Sir James Balfour Paul, Lord Lyon King of Arms. Vol. vi. 1531–38.

There were exhibited:—

By W. J. Grant, Esq., of Beldorny Castle.

A Collection of Thirty Arrow-heads of Flint, found in various parts of Aberdeenshire.

The following Communications were read:—

## I.

## ON VITRIFIED FORTS, WITH RESULTS OF EXPERIMENTS AS TO THE PROBABLE MANNER IN WHICH THEIR VITRIFICATION MAY HAVE BEEN PRODUCED.

By Lieut.-Col. A. B. M'HARDY, C.B., *Vice-President.*

In asking the attention of the Society to some observations on the subject of vitrified forts, it is not necessary for me to rehearse what has already been written about them. The mystery of their origin has never been cleared up in a satisfactory manner, although they have attracted the attention of many antiquaries.

The first printed notice of vitrified forts seems to be that found in Pennant's *Tour in Scotland*, published in 1774, where he says he saw on the top of a hill near Fort Augustus, in a small oval area, a quantity of stones cemented with almost vitrified material, and he could not make out if they came from a volcano or a forge.

Shortly after this we have Williams' letters, in which he described the forts of Knock Farrell, Craig Phadric, and others; his theory being that a fire had been made along each side of the wall, and the stones thereby vitrified; but he puts the suggestion forward with hesitation.

At that time it was believed that vitrified forts were to be found only within a very small area in Scotland, but since then (1777) vitrification has been observed in the remains of old fortifications in many different parts of Scotland, in Ireland, Germany, Austria, and several regions of France. Indeed, it is probable that this list of the distribution of so-called vitrified forts is still far from being complete.

It is therefore clear that vitrification was well known among various races, of whom it may be said, without defining in any way the exact epoch when the work was done, that they must have been in a primitive state of civilisation.

The scheme on which the forts in Scotland have been disposed has led me to consider the time of the Vikings a probable date for some of them.

What is termed a vitrified fort of a normal character may be described as a mound or parapet, roughly circular in plan, or traced as an irregular polygon following more or less closely the edge of the flat top of a hill or ridge.

If we examine the section of the parapet, we find on the soil a mound of loose stones, varying in size, say $2\frac{1}{2}$ feet deep; and overlying the loose stones, a layer, say 2 to 3 feet thick, of similar stone held together by a lava-like substance obtained by the complete or partial fusion of some of the stones in the heap.

This may suffice for giving a general idea of the section of the parapet, but more investigation is necessary, by careful excavation on the ground, before the exact section of the parapet of a vitrified fort is known, and probably considerable variety will be found.

The vitrified material is in most cases now found covered on the top with a little soil and vegetation. The vitrified layer is not found, I believe, perfectly continuous in every part of the parapet, and often appears only at certain points, notably at Tap o' Noth.

The size of the forts varies greatly, from the large fort just mentioned to a heap of stone with no indication of an enclosure which could be called a fort.

In position, the vitrified forts I have seen (seventeen) in Scotland are situated either near the coast where it is deeply indented by the sea, or at inland points which open up a large valley, or a group of valleys radiating from a common centre.

The rocks which seem to melt to form the slag are chiefly mica-schists, felspathic rock, diorite, and moine schist, while the granite has not been affected in the same way by the process. Through the kindness of the late Mr Ivison Macadam, I am able to give a chemical analysis of the slag from the following places :—

| | | Fintraven. Felspathic Sandstone. | | Tap o' Noth. Diorite. | |
|---|---|---|---|---|---|
| 1. | *Soluble in Acids*— | | | | |
| | Ferrous oxide | 0·41 | | 0·75 | |
| | Ferric oxide | 0·12 | | 3·64 | |
| | Aluminic oxide | 1·79 | | 11·18 | |
| | Calcic oxide | 1·16 | | 1·26 | |
| | Magnesic oxide | 1·76 | | 1·52 | |
| | Potassic oxide | 0·04 | | 0·12 | |
| | Sodic oxide | 0·02 | | 0·06 | |
| | Phosphoric anhydride | 0·72 | | 1·22 | |
| | Sulphuric anhydride | 0·12 | | 0·15 | |
| | Carbonic anhydride | 0·06 | | 0·04 | |
| | Soluble silica | 3·76 | | 11·04 | |
| | | | 9·96 | | 30·24 |
| 2. | *Insoluble in Acids*— | | | | |
| | Ferric oxide | 2·22 | | 5·22 | |
| | Albuminic oxide | 6·58 | | 10·82 | |
| | Calcic oxide | 0·96 | | 1·24 | |
| | Magnesic oxide | 3·12 | | 2·03 | |
| | Potassic oxide | 4·14 | | 4 03 | |
| | Sodic oxide | 0 92 | | 1 47 | |
| | Titanic oxide | 1·76 | | 1·42 | |
| | | | 19·70 | | 26·23 |
| 3. | Insoluble silica | 70·11 | | 43·34 | |
| | Loss and undetermined | 0·23 | | 0·19 | |
| | | | 70·34 | | 43·53 |
| | | | 100·00 | | 100·00 |

| | | Eilean-nan-Gobhar. Moine Schist. | |
|---|---|---|---|
| 1. | *Soluble in Acids*— | | |
| | Ferrous oxide | 0·999 | |
| | Ferric oxide | 0·216 | |
| | Albuminic oxide | 0·642 | |
| | Calcic oxide | 0·082 | |
| | Magnesic oxide | 0·453 | |
| | Potassic oxide | 0·143 | |
| | Sodic oxide | 0·068 | |
| | Phosphoric anhydride | 0·026 | |
| | Sulphuric anhydride | 0·666 | |
| | Carbonic anhydride | 0·053 | |
| | Soluble silica | 4·212 | |
| | | | 7·560 |

| | | | |
|---|---|---|---|
| 2. *Insoluble in Acids*— | | | |
| | Ferric oxide | 2·952 | |
| | Aluminic oxide | 13·446 | |
| | Calcic oxide | 0·248 | |
| | Magnesic oxide | 0·693 | |
| | Potassic oxide | 5·216 | |
| | Sodic oxide | 1·431 | |
| | Titanic oxide | 5·602 | |
| | | | 29·588 |
| 3. | Insoluble silica | 62·531 | |
| | Loss and undetermined | 0·321 | |
| | | | 62·852 |
| | | | 100·000 |

We now pass on to consider how it is that the vitrification of these forts has come about. Various opinions have been expressed:

(*a*) Some that it was done incidentally as the result of beacon-fires, or great fires for religious or other purposes.

(*b*) Other authorities see in these forts the intended result of structural operations, believing that the intention was to strengthen the parapet by fusing together the small stones of which it was composed.

The interdependence which can be observed in some of the groups of vitrified forts lends support to the view that they were used for signalling purposes, and I think that that may be assumed as certain, although there seems no reason to suppose that they only were used for that purpose any more than other forts in similar situations, which, being composed of different and more refractory materials, have not left the result of the fires so distinctly marked by the slag.

(*a*) I shall refer to the possibility of producing vitrification by beacon-fires later on.

(*b*) Turning at present to the view that the vitrification was inten-

tionally done to strengthen the parapet, we are met by some difficulties.

In the first place, it is almost certain that vitrification of the larger masses often met with, if intended as a structural method, must have been a troublesome business, and a process to which recourse would have been had only when ordinary building was impossible. But we find in various forts, notably at Tor Duin, near Fort Augustus, and at other places, that the loose stones below the vitrification are supported by ordinary masonry, which apparently might have been carried up the whole way had the builders so desired.

Another difficulty which presents itself is that the vitrification is not as a rule continuous all round the parapet, although for structural purposes, if that were the object, it would seem to be equally required at every point.

But not only is this the case, but we find that the greatest amount of the slaggy mass occurs often—I think I may say generally—where a strong parapet is least needed. At the top of an inaccessible cliff is often found the bulk of the vitrification. This is well seen at Shielfoot, Dunagoil and Ard Ghaunsgail (Arisaig). The last-named fort, which stands on a peninsula, has on the land side a defended entrance which would appear to be the weakest point; but the parapet is there devoid of vitrification, or nearly so.

It will also be admitted that, if the builders were determined to have solid walls, they were not very wise in setting them up on a foundation of loose stone, for they might have anticipated that the vitrified blocks would slip down the hill, as we find a great many of them have done, by the foundation sinking.

Lastly, I think it may be fairly assumed that, if the builders had designed a wall built with a mortar of semi-melted stone, they would have restricted its width to much less than a thickness of say 4 to 6 feet. In this connection, what are we to say to the mass of vitrified matter (described by Fraser-Tytler more than a hundred years ago)

extending along the east end of Craig Phadric, 40 feet wide and 70 feet long?

For these among other reasons, it seems unlikely that vitrification was undertaken as a structural method.

As the air of mystery still hangs over vitrified forts, it occurred to me that it could be to some extent dispelled if we could reconstruct a vitrified parapet; and my purpose to-night is to explain the experiments made with this object during the last five or six years, at long intervals and with insufficient leisure. The positive results have been poor, but a good many negative results have been obtained.

Beacon-fires seemed, at first sight, the most likely source of the necessary heat; so their results were first examined. Undoubtedly a large amount of slag can be obtained from burning grass or straw. This can be easily seen by inspecting the site of any large stack fire. I was fortunate enough (if I may use the expression) to see the results of a large stack-yard fire which occurred at Hay Mount Farm, near Kelso. There fifty-seven stacks of grain and eight of hay were consumed. It was found, where the stacks had been recently erected and the straw was strong, producing an open texture in the heap, so as readily to admit the air, as is the case with a rick of wheat, that there was no slag at the bottom. The silica had gone off in vapour, which had partially condensed on the lee side of the rick in the form of small pellets about the size of a pea. These could be found in considerable number on the ground. Where the material was closer in texture, as in the older oat ricks, some slag was seen at the bottom among the débris; but most of the slag was found at the bottom of the closely packed haystacks, where it lay in a nearly continuous crust, in places about 2 inches in depth.

I should have said that the wind was very high when the fire occurred, and that the combustion of the oldest stacks alone was at all slow.

The chemical analysis, by Professor Macadam, of the slag from this fire is given below, as it may be useful in further investigations:—

| | | | |
|---|---|---|---|
| 1. *Soluble in Acids*— | | | |
| Ferrous oxide | | 0·77 | |
| Ferric oxide | | 0·18 | |
| Aluminic oxide | | 4·68 | |
| Calcic oxide | | 9·73 | |
| Magnesic oxide | | 2·03 | |
| Potassic oxide | | 8·96 | |
| Sodic oxide | | 0·57 | |
| Phosphoric anhydride | | 7·13 | |
| Sulphuric anhydride | | 0·21 | |
| Carbonic anhydride | | 0·16 | |
| Soluble silica | | 35·62 | |
| | | —— | 70·04 |
| 2. *Insoluble in Acids*— | | | |
| Ferric oxide | | 0·11 | |
| Aluminic oxide | | 4·43 | |
| Calcic oxide | | 0·21 | |
| Magnesic oxide | | 0·38 | |
| Potassic oxide | | 2·59 | |
| Sodic oxide | | 0·32 | |
| | | —— | 8·04 |
| 3. Insoluble silica | | 21·76 | |
| Loss and undetermined | | 0·16 | |
| | | —— | 21·92 |
| | | | 100·00 |

As the stack fires, when nearly burned out, had been extinguished with water and otherwise, and as the stone bottoming might have thus escaped fire action, the following experiments, among others, were carried out to ascertain the action of open fires having a base of selected stones. The first experiments were made on the high moorland near Riccarton. To begin with, on a base of stones constructed like a saucer, having a diameter of 5 feet, 100 stones of old moorland hay were burned. The process took about eight hours. The result on the stones was nil, but some very small streams of slag were found outside

the lip of the saucer on the lee side of the fire. The stones in the bottom were covered with ash. They were chiefly whinstone.

The next fire was arranged with the stone heap raised in the centre and having a diameter of 10 feet. On this, some hay and an unlimited amount of bracken were burned for six hours. The heat was so great that with difficulty could the men pile on the fuel. The result on the stones in the heap at the bottom was that many of them were fractured and burned, but there was no vitrification.

The third experiment was carried out on the sea-shore at Arisaig—that district being selected because it is the site of a group of vitrified forts. On the stone heap in this case a mixture of four loads peats, four boat-loads brushwood, twelve cart-loads of sea-weed, and a boat-load of grass was burned, and the blaze was kept up for thirty-nine hours. The result on the stones below—they were principally moine schist—was, as before, fracture and roasting, but no melting or approach to fusion.

With this experience I had become satisfied that a beacon-fire—understood in the sense of an open blazing mass—had not produced vitrification of stones lying in a heap below it. Another solution had therefore to be found.

In a good many papers on the subject of vitrification, it is explained how easily it can be produced; but it does not seem such an easy matter in the field, when you tie yourself down to use only the materials found on the ground. It may be convenient here to refer to a remark made by Mr Ramsay of the Geological Survey, writing in 1859, and repeated later by others.

The observation was to the effect that he thought the vitrification at Knock Farrell had been produced by burning with wood, and explained how the rocks near Barnsley were more or less vitrified by being burned in heaps with coal and brushwood. The stones were described as sandstones. I thought this so interesting that I communicated with the Borough Surveyor, Barnsley, Mr J. H. Taylor, who informed me that

never had any *stone* been burned, but that some clay shale used to be burned in clamps about sixty years ago, so as to harden it for use on roads with light traffic, or for blinding—as we now see the same thing done on railways for ballast. That is a very different thing from fusing pieces of mica schist such as are found in vitrified forts, and I think some mistake seems to have been made by Mr Ramsay as to the sufficiency of the explanation.

To return to the experiments at Arisaig: What had already been done and observed led to the conclusion that the burning was too rapid, and that the supply of air had to be reduced.

A rough stone square enclosure was therefore set up, the walls being about 3 feet high and the sides about 4 feet long. A layer of loose stones was put in the bottom of the enclosure, and over them peat and brushwood were filled in up to the top of the wall, and a fire set agoing. When the fuel was about half burned, more wood was added, and a layer of stone about 1 foot thick was placed on the top and covered over with peat. As this sank down, hay was added to check the draught.

The result of this was that incipient fusion, producing a sort of glaze, was noted on some of the stones which had been placed on the top and had sunk down into a part of the fire where there was little or no draught. The remainder were only burned. The burning lasted six hours, but the enclosure remained hot for twenty hours.

Another experiment was made under similar conditions, except that the walls were less open and damp moss was placed on the top; but no vitrification resulted.

A third trial was made in the same built enclosure, with $2\frac{1}{2}$ feet of small branches below, with some peat and then 1 foot of stone above, and the top was kept covered with rough hay. The stones which had most heat were burned; where they were out of the draught they showed signs of commencing fusion on the surface. This took about nine hours.

Some other similar experiments were made.

It will be seen that the attempt to vitrify by heat above the stone

was being abandoned, and the fuel was now being put below the stones. To this I had been led by a more close examination of specimens from vitrified forts, on many of which can be seen the imprint of woody fibre (as in fig. 1), showing that branches had been used for fuel, to some extent at least; and from the direction of the drops at the ends of the semi-fluid slag it was clear that the branches had been under the melting stone in many cases. These prints of the branches in the slag from

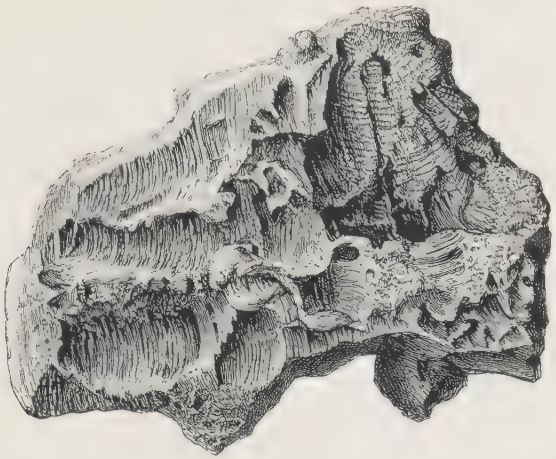

Fig. 1. Portion of a Vitrified Mass from Eilean nan Gobhar, showing impressions of woody fibre. ($\frac{1}{2}$.)

vitrified forts are very interesting. They are referred to by Daubrées in his "Comptes Rendus" (1882), *Revue Archéologique*

The last experiment I made was on different lines.

A small fire of brushwood was lighted on the shingle on the shore. After the fuel was alight, it was covered with a thin layer of stone. When it was thought that the fuel below was nearly exhausted, then a few more pieces of wood were put on, and these again were covered with stone, and so on. The object was to check the consumption of the fuel as much as possible, without altogether extinguishing the fire.

After about eighteen hours the pile had risen to about 4 feet high and the base was 6 feet in diameter, and a great heat was emitted. It was noted that the top surface of the pile, as the experiment was going on, was so hot and flat that it would have sufficed for cooking purposes. When the heap was examined, a vitrified portion was found in the centre, weighing about 8 lbs. and situated about 18 inches from the top.

Up to the present time I have had no opportunity for continuing these experiments, but, as they have already been spread over some years, it seemed to me desirable that they should be recorded for the use of any others who may care to continue the investigations. I have come to believe that vitrification in these ancient forts was brought about somewhat after the manner of the last experiment, but the rate of combustion requires still to be largely reduced, and the heat which escapes from the mass conserved. It is in this direction that I hope to make further trials when opportunity occurs.

With the small results already obtained, I think it is fair to assume that vitrification was produced by a very slow process: not by a great fire in the open, but by a slow heat with a very limited supply of oxygen. The delicate impressions of the fibre of the wood (as shown in figs. 1 and 2) could not have been taken except in an undisturbed environment, and with a liberal supply of time, with a moderate temperature. This is in keeping with the investigations of Professor Joly, who has pointed out that rock solids can be fused at a comparatively low temperature if it is kept up for a long period. These schists would probably require from 1000° to 1200° F. Further, it is difficult to believe that the inhabitants of these forts had a large command of fuel —certainly not in some districts such as Arisaig, or on the barren islands along its shores.

Looking at the subject generally, I think it is clear that the occupiers of the vitrified forts in Scotland did not possess the command of the sea, and that the so-called forts were in many cases simply signalling stations, which necessarily, with such a purpose, would be occupied for considerable

periods at one time—probably during the summer half-year at least. The interior line of forts in the series would contain a certain number of men, who would defend the position or retire as they estimated the strength of the attack. I suggest that a smouldering fire would be required in such forts, which could be stirred up at any moment as a signal; and at the same time it might be used for cooking, as I believe

Fig. 2. Portion of Vitrified Mass from Tor Duin, showing impressions of woody fibre. ($\frac{1}{2}$.)

is now done in some of the Pacific islands. Such a fire would in time produce a large amount of slag in a region where the stone was easily made viscous, while in other places there might be no trace of vitrification.

The group of forts near the Sound of Arisaig, just north of the peninsula of Ardnamurchan, may be taken as an illustration.

From the broad arm of the sea called the Sound of Arisaig there run to the eastward into the land two lochs, marking the bottom lines of two

extensive valleys. On the north end of the east side of the sound is Loch nan Uamh, and at the south end Loch Ailort.

At the mouth of Loch nan Uamh, on the north side, stands the vitrified fort of Ard Ghaunsgail, on a small headland from which the valley at the head of the loch is open.

At the mouth of Loch Ailort, on a small island, stands the double fort of Eilean nan Gobhar. This island is close to the shore on the south. These two forts are in view of each other; but, if they were to some extent to be used for sentinels, it is evident that they could give little notice of a fleet from the north, as the north side of the sound is covered by the projecting headland which ends in Rhu Arisaig. But, on making close inquiry, I found that there were vitrified remains on an island near the north-west angle of the sound called Eilean na Ghoil. There is on this island a fine example of the raised beaches so common on the west coast. On the top are remains of a fort with sporadic vitrification, and on the low beach other traces of vitrification. The places in both cases are more or less triangular. From this point the forts at Ard Ghaunsgail and Eilean nan Gobhar are visible, but there is a very limited sea-view to the north. Further inquiry was made, and an islet called Eilean Port na Muirach was ultimately found with vitrification on the top, whence a fine open view was got of the sea from Ardnamurchan to the Sound of Sleat. Thus, then, there could have been telegraphic communication by smoke or fire to the valleys at the mouths of the Lochs nan Uamh and Ailort of a ship rounding Ardnamurchan Head from the south, or coming down the Sound of Sleat from the north. Now, while on no system of defence would it have been reasonable to isolate a small garrison on Eilean na Ghoil, and while in the case of Eilean Port na Muirach there was no space for a fort or garrison, these islands provided a perfect system for warning the inhabitants of the valleys round the Sound of Arisaig and its eastern lochs of the approach of an enemy, and this, I suggest, was their purpose.

The group of forts just described is a very small one, and I think

that progress in the investigation of the questions connected with vitrified forts would be much facilitated if the interdependence and correlation of the forts were more fully studied. For instance, a good deal has been somewhat loosely written about the extent to which the known vitrified forts along the great line of lochs between Inverness and Fort William are visible one from the other.

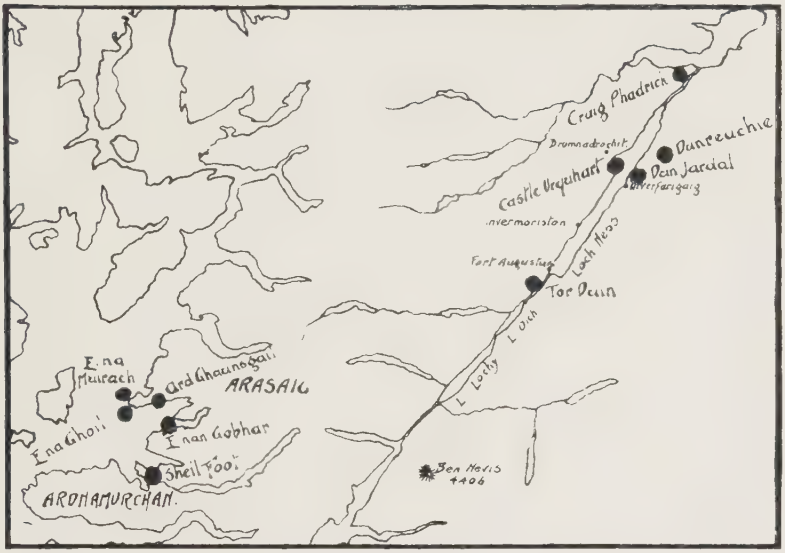


Fig. 3. Map showing Vitrified Forts in Arisaig and along the Caledonian Valley.

In trying to find out what the line of communication was—if, as is probable, there was one—I was driven to examine the promontory on which Castle Urquhart now stands. That point seemed to me the necessary site of a vitrified fort, if the assumptions on which I was proceeding were correct. It was gratifying, therefore, on a pretty close search being made, to find among the débris on the shore several water-worn pieces of vitrification which had formed part of a fort which must have been removed when the now ruined castle was built.

This discovery permits of the following suggestion being made as to the line of military signalling and communication from the north-east along the line of the lochs.

Starting from Craig Phadric, which commands a far view of the Moray Firth, communication could be carried to Dunreachie Fort on Ashie Moor. The stones of which Dunreachie is formed are of a very refractory nature, as the district belongs to the Old Red Sandstone, and no vitrification appears there.

From Dunreachie the fort at Castle Urquhart was visible, and would be now, were it not for the tall trees in Erchite Wood.

From Castle Urquhart, Dunjardel is well in view, and there is a clear though long line to Tor Duin, near Fort Augustus. It may be that there was another fort somewhere near Glen Moriston. But the discovery of that and of the communication south-west from Tor Duin remain for further investigation.

## II.

## NOTES ON A HOARD OF ELEVEN STONE KNIVES FOUND IN SHETLAND. By ROBERT MUNRO, M.D., LL.D.

At the request of their owner, R. C. Haldane, Esq., seven of these knives are now presented to the National Museum.

The following letter from Mr Haldane sufficiently explains the reasons for which these interesting objects were put into my hands, as well as the conditions on which they henceforth become national property.

LOCHEND, OLLABERRY, SHETLAND,
*24th March* 1905.

MY DEAR DR MUNRO,—I send to-day, by parcel post, seven scrapers. They were found at Esheness, Northmavine, in making a road, 9 inches deep in a gravelly subsoil. They were packed closely together with the edges uppermost. There were eleven in all, but several were broken, and I bought the best. The other four I did not see, and do not know what became of them. Nothing else was with them, and they appear to have been a store which had not been disturbed. There was no trace of any building near, but the Brough of Priesthoulland was about half a mile distant. Before these were found the superincumbent peat had been removed. The finder thought a total depth of 4 feet of peat and soil had covered the scrapers. There are said to have been two or three Picts' houses not far away, one at a place near the churchyard called Saebrig and one at Hogaland. They were found in the year 1900.

When you are done with them, if they are of sufficient interest, please present them to the Museum from me. If they do not care to have them, I will keep them. Should they keep them, I would like them all kept together.

I am afraid I can give you no more information about them, and must leave it to you to spin out their history.—Yours sincerely, R. C. HALDANE.

A mere glance at these objects shows that they possess certain characteristics which place them in a special category among ancient stone implements. They are large thin blades made of volcanic rock known as *rock-porphyry*, irregularly oval or subquadrangular in form, and highly polished on both surfaces, with the margin all round ground to what may be called a cutting edge.

With the assistance of Mr B. N. Peach, LL.D., F.R.S., whose knowledge of the geology of Shetland is unrivalled, I have drawn up the following descriptive details of each specimen in this hoard, so as to

make them available for comparison with similar discoveries elsewhere recorded :—

No. 1. The rock of which this implement is made is quartz-porphyry, and shows double pyramids of quartz and porphyritic crystals of orthoclase in a crypto-crystalline ground-mass. It is subquadrangular in form, with a portion broken off at one end, and measures 5 by 5 inches.

No. 2. This specimen (fig. 1) has the same composition as No. 1, but in addition shows platy flow-structure oblique to the flat surfaces of the

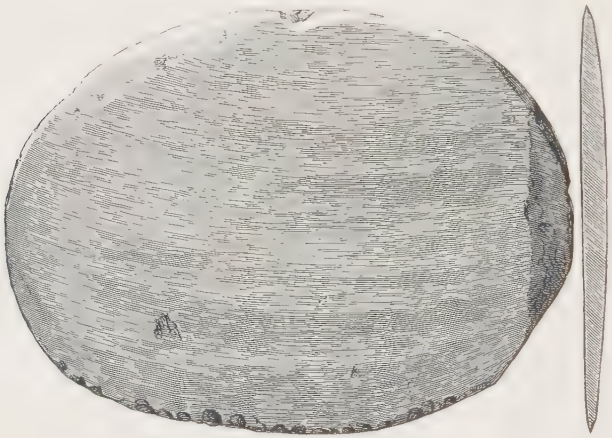

Fig. 1. Oval Knife of Quartz-porphyry (No. 2) from Esheness, Shetland. ($\frac{1}{2}$.)

implement. Its shape is oval, with a good cutting edge all round, and it measures 6 by $4\frac{1}{2}$ inches.

No. 3. All the remarks made on the mineral structure of the two former are applicable to this specimen, with the addition that some layers are spherulitic. Oval in form, with one end nearly straight. Its diameters are $5\frac{7}{8}$ and $4\frac{1}{4}$ inches.

No. 4. Made of very fine-grained quartz-porphyry with few porphyritic elements, suggesting that it came from the chilled outer edge of the volcanic mass. This implement (fig. 2) is irregularly quadrangular, three sides being nearly straight, and the fourth curved out-

wards, with a rectangular notch half an inch deep. The margin of this notch is, however, ground down to an edge like the rest of the perimeter of the implement.

No. 5. This specimen has the same composition as No. 3, but the flow-layers are nearly at right angles to the surfaces of the implement. Spherulitic structure well developed. It is oblong in shape, having a corner portion broken off, and measures 6 by 3 inches.

No. 6. Like Nos. 2, 3, and 5, but strongly spherulitic, and structure

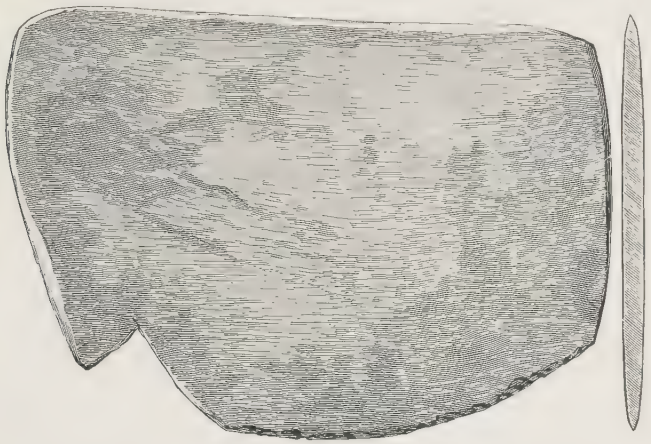

Fig. 2 Knife of Quartz-porphyry from Esheness, Shetland. ($\frac{1}{2}$.)

better seen. This implement has one end broken off, and the other is rectangular. The remaining portion measures 4 by 4 inches.

No. 7. Porphyritic and spherulitic elements well shown. It is an irregular oval and a thicker specimen than any of the others, having a maximum thickness of nearly half an inch. Its greatest and least diameters are $4\frac{7}{8}$ and $3\frac{7}{8}$ inches.

Porphyritic rocks are abundantly met with in Shetland, and it would appear that all the above-described implements had been manufactured from the same quarry. Dr Peach informs me that this kind of rock, on long exposure to atmospheric agencies, breaks up into thin laminæ, like

slaty materials, so that in reality nature performs the first and most difficult stage in the manufacture of these knives.

It may also be noted that their position under a depth of 4 feet of peat, together with the whitish layer of patina which covers them all over, gives them, *primâ facie*, a claim to considerable antiquity. Though no two specimens are precisely alike, there is a general, indeed striking, resemblance between them all; and only in one instance does the ratio between their longer and shorter diameters go beyond 6 to 4 inches—the exception, No. 5, measuring 6 by 3 inches.

I shall now proceed to inquire how far the characters of the Esheness implements, and the circumstances in which they have been found, tally with the records of other discoveries which come under the general category of Picts' knives, as they are called in Shetland.

The earliest notice of this kind of implement which has come within the range of my knowledge is to be found in Low's *Tour through Orkney and Shetland*, 1774, pp. 82–4. After describing and figuring what was shown him as a "thunderbolt," but which is nothing more nor less than an ordinary stone axe, he goes on to say that he "was shewn likewise a stone instrument quite differently shaped from that described on the other page. This was broad and thin, much shorter than the other; seemed to have been made use of as a knife, or instrument for cutting by the hand, as the other for striking. Its edges were all well sharpened, and was supposed by the owner (Mr W. Balfour of Trenaby) to be a knife made use of in sacrifice. I procured one of the latter, the figure of which follows." This figure shows a subquadrangular implement, 5 by $3\frac{1}{2}$ inches, with one corner knocked off. The sides are described as "well ground," with "a fine edge." "The greatest thickness of this instrument," he writes, "is scarce three-tenths of an inch, the edges canelled on both sides like a carpenter's axe."[1]

On landing at Vaila Sound, near Walls, from Foula, Mr Low writes as follows:—

[1] These stone objects were shown to Mr Low at the house of Sir John Mitchell at Sandhouse, parish of Aithsting and Sandsting.

"Here I was shewn a couple of stone instruments yet differently shaped from those taken notice of before. The largest 7 inches long and 4 broad, ground thin, shaped like the segment of a circle, the circular side edged but pretty much broke, the chord thick like the back of a knife, and left so purposely; seems to have been used as a knife. The other 4 inches long, shaped pretty much like the axe (*vide* p. 83 *supra*); might have been the head of a spear or other long weapon." (*Tour*, p. 117.)

Drawings of both these implements are given, and from an inspection of them there can be no doubt that the former belongs to a well-defined variety of the knives now under consideration, and which will be subsequently more fully explained. The other is manifestly a small stone celt.

Writing later, p. 140, Mr Low states that "many of the stone weapons mentioned above are found in this parish (Northmavine), particularly seven in one place, but all dispersed before my arrival. They were found underground, forming a circle, the points toward the centre."

The Rev. John Bryden, in his description of the united parishes of Sandsting and Aithsting in Shetland (*Stat. Account of Zetland*, 1841, pp. 112 *et seq.*), states that, on removing black unctuous earth from an urn discovered on the glebe, he found "lying at right angles in the bottom four pieces of broken stone axes," which appear from the context to have been portions of the oval-shaped knives. Mr Bryden explains that urns found in the locality "appeared to have been rudely wrought out of a coarse sandstone, and others out of a soft stone called kleber."

He then goes on to describe these stone axes, which he calls *steinbartes*, and classifies them into single- and double-edged tools, the former being described as having a semilunar cutting edge, while in the latter the edge went nearly all round. Both the title (*steinbarte*) and classification are taken from Dr Hibbert's work on Shetland (p. 248). It appears, however, from the illustration on the plate at the end of the volume that the single-edged steinbarte is merely the ordinary stone axe—an inference which is corroborated by the dimensions of the implement figured, viz. 6 inches long, $2\frac{1}{2}$ broad, and 1 inch thick.

"The blades of steinbartes," writes Mr Bryden, "are very abundantly found in Shetland. Not unfrequently several of them are discovered buried together,

thus indicating a little armoury, from which a number of weapons might be distributed on an emergency, by the hand of some chief, to a small band of natives met together, on the alarm of common danger. Assemblages of these weapons have been found in the parishes of Walls, of Delting, and in the island of Unst. The larger steinbarte may have been used both as an offensive and defensive weapon, either by throwing it from the hand, or striking with it, when the combatants came to close quarters; and the smaller steinbarte, it is probable, was formerly used for domestic purposes, and held a similar place in the eighth or ninth century which a knife does in the nineteenth. That they are a very ancient instrument is without doubt; for even tradition itself is silent, both as to the time when and the people by whom they were used."

Mr Bryden combats Dr Hibbert's opinion that these flat knives were inserted into wooden handles and used, either as warlike weapons, or as halberts.

With regard to the classification of the flat Shetland knives—the double-edged steinbartes of Dr Hibbert and Mr Bryden—it seems to me that they may be appropriately divided into *discoidal* and *semilunar*. Although there is no typical example of the latter among the Esheness group, we shall immediately see that the characteristics of many specimens in the national collection, and elsewhere, justify the adoption of some such classification. In using a knife showing a sharp margin all round, one part of it must be held in the hand, and in some instances I have observed a corresponding blunt portion. Other writers have recorded finger depressions on one of the surfaces, to give a better hold of the implement. But the semilunar knife is clearly defined by having an elongated shape, with one of the long sides thick and blunt, while the other is ground down for cutting purposes. A Shetland knife in the possession of Sir John Evans is thus described:—

"I have a specimen, $4\frac{1}{2}$ inches long and $3\frac{1}{4}$ inches wide at the base, formed of porphyritic greenstone, and found at Hillswick, in Shetland, which was given me by Mr J. Gwyn Jeffreys, F.R.S. Its cutting edge may be described as forming nearly half of a pointed ellipse, of which the thick side for holding forms the conjugate diameter. This side is rounded and curved slightly inwards; one of the angles between this base and the elliptical edge is rounded, and a portion of the edge is also left thick and rounded, so that when the base is applied to the palm of the hand the lower part of the forefinger may rest upon it. When thus held it forms a cutting tool not unlike a leather-cutter's knife." (*Ancient Stone Implements*, p. 308.)

Of twenty-two specimens recorded in the Catalogue of the National Museum, and now exhibited there, four oblong specimens, made of dark-coloured porphyry, were found together in a bog in the island of Uyea, Unst (*Proc. S. A. Scot.*, vol. xix. p. 332). One, made of porphyry, was found in each of the following localities, viz. Hillswick, Busta, Fyal Bank (Unst), and Northmavine; twelve of porphyry and one of serpentine are without any assigned locality; and one of hornblende rock, from Houland, Walls, has the peculiarity of being polished and thinned to an edge from the back. In other words, it is a semilunar tool measuring $7\frac{1}{4}$ by $3\frac{3}{4}$ inches.

On ransacking the volumes of the *Proceedings* of the Society since 1892, the date of the publication of the Catalogue, I find nine specimens (exclusive of the Modesty hoard) recorded among the purchases for the Museum. These are all stated to be made of porphyritic rock; one is from Unst, and the other eight from Northmavine. The Unst specimen measures $4\frac{7}{8}$ by $2\frac{1}{2}$ inches, and differs from the normal type inasmuch as it is brought to a sharp edge only on one of the two longer sides. Among the eight from Northmavine, one is differentiated from the others by having the form of a segment of a circle, almost crescentic in appearance, like the well-known flint knives or saws of Scandinavia. It is $7\frac{3}{8}$ inches in length and $2\frac{1}{8}$ in its greatest breadth.

We now come to the consideration of one of the most important discoveries of the kind hitherto made in Shetland, viz. a hoard of nine stone axes of the ordinary types of the Stone Age, and about fourteen specimens, whole or fragmentary, of the knives now under review. The circumstances in which this assortment of objects was found are thus briefly described by Mr George Kinghorn:—

"When spending my holidays in Shetland, and residing at the house of Mr Laurence Laurenson at Modesty, about four miles north of Bridge of Walls post-office, I was shown three stone axes and three large, oval, and polished stone knives found by his boys in a grassy knoll in front of his house. The knoll is about 20 yards long and 10 yards broad. On the east and west it slopes gently and on the south abruptly, the ground being broken when the axes were found.

"The strata are composed of—

(1) Grass, turf, and sandy peat, about 8 inches.
(2) Yellow peat ashes, about 5 or 6 inches.
(3) Decomposed charred wood, about 4 or 5 inches.
(4) Subsoil, red gravel, and rock.

"The axes were found in the charred wood layer.

"About eighty or ninety years ago, previous to his house being built, a bank of peat, about 4 feet thick, had been removed from the site of the house and the knoll, and this may account for the shallow depth at which the relics were found." (*Proc. S. A. Scot.*, vol. xxix. pp. 7 and 49; xxx. p. 39.)

On making further search in the knoll, three vessels or urns of steatitic clay, some more stone implements, and a pair of saddle-quern stones were found. Fragments of the so-called urns show that the pottery was about half an inch thick, and made of very coarse materials mixed with small stones and what looks like the stalks of withered grass. The whole of the Modesty relics, consisting of nine polished stone axes of diorite, porphyrite, or hornblende, and fourteen oval knives of differently coloured porphyrites, are now preserved in the National Museum. Also, from the same place are two masses of heavy clay, apparently moulded or kneaded by hand, and fragments of charred faggots of branches or roots, from 1 to $1\frac{1}{2}$ inch in diameter.

With regard to this find there are a few points which claim attention.

(1) The urns would seem to presuppose burial, but not necessarily, as the vessels might have been used for domestic purposes. Hence, I would provisionally suggest an alternative hypothesis, viz. that the green knoll was the site of a wooden habitation which had been destroyed by fire, thus accounting for the amount of peat-ashes and charcoal as the embers of the fallen roof, which originally consisted of rafters and turf. This hypothesis cannot be summarily set aside on the ground that wood no longer grows in Shetland, because at the bottom of many peat-bogs in that locality remains of timbers several inches in diameter are to be found. Now, in the case of the Modesty habitation, the purport of the evidence goes to show that the remains belonged to a period anterior to the growth of peat in that locality; so that brushwood, or even trees,

sufficiently large to be utilised for the construction of huts, might have been then growing in this part of Shetland.

That forests, with trees probably of no great size, formerly grew in Shetland there can be no doubt. Wandering one day over a peat-moss near the town of Lerwick, I saw heaps of decayed bogwood, with stems and roots up to 5 or 6 inches in diameter, which had been collected by the peat-cutters and left there to dry.

Mr George Low (*Tour*, p. 146), while passing through the parish of Delting on his way to the island of Yell, writes thus "as proof of trees having been here at some remote period": —

"Observed near the kirk of Scalsta, in the bank where the sea had wore away the earth, a continued stratum of large pieces of wood, in a horizontal position, a few inches above the hard gravel, covered with about 10 feet of moss. This stratum is continued as far as I could search the whole length of this worn bank, and probably round the bay; it consists of pieces from 8 inches to ½ an inch diameter, roots, stocks, and in a word, all parts of a tree; seems Hazle and Aquatick woods, but so much rotten that no part can be moved. In many places of Orkney and Shetland the peat-diggers often find great heaps even of the leaves of trees."

The same author, in his description of the island of Foula (*ibid.* p. 103), makes the following remarks:—

"They have many traditions of there having once been wood in their island; they show us a valley, now a moss, which they affirm was covered with it, and to this day, in cutting peats often find large pieces of both trunks and branches of trees. Tradition says the Lewis-men in their plundering parties thro' the isles landed here, and after pillaging Foula burnt the wood, lest it should be a shelter to the natives in future times."

(2) All the knives in the Modesty group, though nowhere thicker than half an inch, have the appearance of being thicker and coarser than their analogues elsewhere, and also the peculiarity of thinning gently from the back towards the cutting edge—thus coming under the category of semilunar tools. Moreover, the cutting edge has the further peculiarity of being retouched by chipping on one face, with the exception of one which is chipped on both sides. This chipping process is probably the same feature which attracted Low's attention when he describes one of his specimens with "edges canelled on both sides like a

carpenter's axe" (see page 9). Indeed, a large number of these knives show more or less of a serrated edge which in some instances may have been due to re-sharpening the instrument.

(3) As to the antiquity of the find, the evident conclusion to be derived from the association of so many of these knives and of so many ordinary stone axes of Neolithic types, with a saddle-quern, kneaded portions of clay, fragments of three coarse vessels, together with such abundance of peat-ashes and charred wood, is that it dates back to the Stone Age, whatever the chronological horizon of that period may be in these northern latitudes.

Sir Daniel Wilson, in his *Prehistoric Annals of Scotland* (vol. i. p. 183), gives the following information of the discovery of these curious knives in the valley of the Forth, which is the only recorded instance of their having been found outside of Shetland :—

"In the Shetland and Orkney Islands especially, stone knives are common ; and in other districts, knives of flint, styled by the Shetlanders Pechs' knives, are found. These are shaped like a shoemaker's paring knife, with the semi-circular line wrought to an edge, while the straight line is left broad and blunt. Others are oval or irregular in form, and thinning off to an edge round the whole circumference. One of the latter, in the Scottish Antiquarian Museum, formed of a thin lamina of madreporite, was found at one of the burghs or round towers of Shetland. It measures 4½ by 4 inches, and does not exceed, in greatest thickness, the tenth of an inch. Similar implements, in the collection of the London Antiquaries at Somerset House, are mentioned by Mr Albert Way, as probably the ancient stone instruments transmitted to Sir Joseph Banks by Mr Scott of Lerwick, in Shetland, and communicated to the Society, March 9, 1820. Sixteen were found by a man digging peats in the parish of Walls, Shetland, placed regularly on a horizontal line, and overlapping each other like slates upon the roof of a house, each standing at an angle of 45 degrees. They lay at a depth of about 6 feet in the peat-moss, and the line of stones ran east and west, with the upper edge towards the east. A considerable number of implements, mostly of the same class, were found on the clay under the ancient mosses of Blair-Drummond and Meiklewood.[1] Some of them are composed of slate, and others of a compact greenstone. They are

[1] The antiquities of stone and bronze found under Blair-Drummond moss were exhibited at a meeting of the Society of Antiquaries of Scotland on March 13th, 1871, and I understand from Dr Joseph Anderson, who was present and examined the collection, that it contained no stone implements that could be mistaken for any of the Shetland knives. (See *Proc. Soc. Ant. Scot.*, vol. ix. p. 179.)

from four to six inches long, flat and well polished. There were also along with them a number of stone celts and axe-heads, mostly made of the same hard greenstone."

Of the sixteen above referred to as being found in a peat-moss in the parish of Walls, two are in the British Museum and figured by Sir John Evans in his *Ancient Stone Implements* (figs. 262 and 263). Besides these there are several other specimens, from various localities in Shetland, preserved in the Museum. "A note attached to one of them," writes Sir John Evans, *loc. cit.* p. 310, "states that twelve were found in Easterskild, in the parish of Sandsting. An engraving of one of them is given in *Horæ Ferales* (Pl. II. 15.)"

Mr J. W. Cursiter of Kirkwall, who owns a large and well-selected collection of antiquities from Orkney and Shetland, has kindly sent me the following notes on the Shetland knives in his possession:—

"There are in my collection 21 knives whole and 9 portions, all from Shetland, and I know of none but sandstone ones having been got in Orkney. They are nearly all formed of quartz-porphyry, the exceptions being two of felstone, one of striped gneiss, and one of hornblendic gneiss. There are one or two specimens which my limited knowledge prevents my finding a mineralogical niche to put them in.

"Only one of those in my possession, so far as my notes show, formed part of a hoard, viz. one of five found at the back of the yard dyke, Scarvester, Sandsting, in 1885; the other four being in Mr Umphray's collection. Nearly all my specimens were obtained from crofters who had them in their possession for some time, and who as a rule found them in course of their agricultural operations. They are very averse to part with them, for such reasons as that they serve to avert lightning, that condensation on them foretells rain, etc. I send four outlines of my largest specimens to give you an idea of their size." Their dimensions are as follows: (1) $10\frac{1}{2}$ by 5 inches, (2) 8 by $5\frac{7}{8}$, (3) $7\frac{3}{4}$ by 5, (4) 8 by $4\frac{3}{4}$. No. 1 is semilunar, and all the others more or less oval."

Mr J. Goudie, Montfield, Lerwick, writing on March 3rd, 1906, informs me that he possesses ten specimens of the Shetland knives, of which the following particulars are known:—

No. 1. This is the largest specimen I have seen, measuring no less than 13 in. by $6\frac{1}{2}$ in. It is semilunar in shape, and made of a dark grey, polished stone; found in walls.

Nos. 2 and 3. Two of a group of five found under 6 feet of peat moss, near

Loch of Greesta, Tingwall, and measuring 10 in. by 4½ in. and 9 in. by 5½ in.; both are semilunar in shape.

Nos. 4 and 5. From Northmavine; dimensions 6½ in. by 4 in., and 5¼ by 4 in.

Nos. 6, 7, and 8. Three of a group of four found near Sandy Loch, Lerwick, and all measuring about 4 inches in length and 3 in breadth.

No. 9. From North Hammersland, Tingwall; 5 in. by 3½ in.

No. 10. From Northmavine; 4½ in. by 3½ in.

"These implements," writes Mr Goudie, "share with the Celts a certain, though inferior, superstitious respect. They are frequently found in groups and usually at a considerable depth in the subsoil under the moss. Among those in my possession are two, found at Loch of Greesta, which are notched and flattened on the back, as if to be used with a shaft. When found they were placed on edge. Other two from Northmavine formed part of the Esheness group, the larger portion of which was secured by Mr Haldane, now in your possession. The very large knife in my possession, No. 1, was said to have been used for flenching whales."

In addition to the stone knives in the Museum of the Society of Antiquaries, London, already incidentally referred to, Sir John Evans states that there are some fine specimens from Shetland in the Ethnological Museum at Copenhagen; and no doubt careful search would disclose the existence of a few more in private keeping.

Summarising the somewhat scattered details of the various discoveries thus brought before you, it will be observed that 10 were hoards, each containing from 4 to 16 specimens—79 in all. Of these, 25 are in the National Museum, viz. Esheness 7, Uyea 4, Modesty 14,—the other 54, except the few in London, and in the collections of Mr Cursiter and Mr Goudie, having been dispersed. The total number at present known may be stated in round numbers at 100, thus accounted for: 52 in National Museum, Edinburgh; 30 in Mr Cursiter's collection; 10 in Mr Goudie's collection; and 8 (approximately) preserved in museums in London and Copenhagen.

It may also be mentioned, as a point of further specialisation of these knives, that none of them is formed of flint; nor is there any record of any of them having been found out of Shetland, with the exception of the Blair-Drummond specimens (if such they were) referred to by Sir D. Wilson. The special purpose for which this class of implement was originally intended is still a matter of conjecture. It is clear from their

slender make and liability to breakage that they could only have been used for dividing soft material, skinning animals, etc. The common practice in Scandinavia in prehistoric times of depositing implements, weapons, and ornaments in lakes, bogs, and fields, as a religious offering to the gods, may suggest that some of the Shetland finds were of this nature ; and this idea is strengthened by the careful manner in which the specimens in some of the hoards were arranged. I prefer, however, to side with the theory that they were the stock in trade of the natives, used in commerce, which their owners, in time of danger, had deposited for safety, and which for various causes had never been reclaimed.

The age of these unique objects is the only important question which now remains to be discussed. We have already seen that some of them were associated at Modesty with implements of the Stone Age, and, problematically, were contemporary with the period when a stunted arborescent vegetation obtained in Shetland—a period which must have been coeval with the great primeval forests which formerly flourished on the islands and mainland of Scotland, remains of which are still to be found in the peat-land moors of these regions. History records that these Scottish forests had not entirely disappeared when the Roman legions penetrated into North Britain ; nor are we without evidence to show that man and his works were contemporary with some of these forests, before they were overwhelmed with peat growth (*Prehistoric Scotland*, p. 36 *et seq.*). The hypothesis that these knives were in use during the Forest Age in Shetland does not, therefore, necessarily carry us back beyond the first two or three centuries of the Christian era. Another important factor in this problem is the relation of the knives to the relics found in the culture débris of the brochs, whose chronological range we know to extend for about a thousand years, beginning with the time of the final departure of the Romans from Britain. Notwithstanding the fact that Shetland contains close on a hundred brochs, more than a fifth of the total number in Scotland, it is a melancholy fact that not one has been sufficiently investigated to yield a collection of relics. From the structural similarity of all brochs in Shetland,

and elsewhere, there is reason to believe that it was the same people who constructed them. Although no stone knives of the Shetland type have hitherto been found in any of the brochs investigated, it does not follow that they were not used by the people of the Shetland brochs. The spade alone can decide this question; and until this is done we have fair presumptive evidence for assigning these Shetland knives to the period which preceded that of the brochs.

## III.

## REPORT ON STONE CIRCLES SURVEYED IN THE NORTH-EAST OF SCOTLAND, CHIEFLY IN BANFFSHIRE, WITH MEASURED PLANS AND DRAWINGS; OBTAINED UNDER THE GUNNING FELLOWSHIP.

By FRED. R. COLES, Assistant Keeper of the Museum.

In the report for the year 1903,[1] the most westerly site in the northern portion of the Buchan district was at the Standing Stones of Auchnagorth, three miles to the west of New Pitsligo. For an area westwards of Auchnagorth measuring ten miles by four, there are no sites recorded on the maps. The absence both of cairns and of circles is very marked. Doubtless, this is in great part due to the highly cultivated condition of the land in that district.

In the district dealt with in our last survey, the results of which are contained in the present report, the recorded sites are fairly frequent; but, on the majority of them, the actual megalithic remains are lamentably meagre. The district surveyed is a very wide and a very irregular one, and it will be most easily represented by being divided into four portions, viz.—(I.) Sites in Banffshire to the north-east of Huntly, and mainly in the parishes of Gamrie, Alvah, Boyndie, Marnoch, Ordiquhill, and Rathven; (II.) Aberdeenshire sites in the parishes of Cairnie and Glass; (III.) Sites to the north and the north-west of Huntly; and (IV.) Sites to the west of the river Spey, in Elginshire.

[1] *Proceedings*, xxxviii., p. 281.

## I. Banffshire Sites to the North-East of Huntly.

*No.* 1. *North Burreldales, Mountblairy, Alvah.*—This site is marked

Fig. 1. North Burreldales Circle; Ground-Plan.

on the six-inch Ordnance map by the words "Stone Circle, site of"—a misleading record, for there are in reality four Stones still *in situ*.

They stand in a roundel of wood on the south-east of the farm-road

going up to Brownside Wood, at an altitude of 400 feet above sea-level, and distant three miles N.N.W. of the Circle [1] in Whitehill Wood, Forglen. If the hills were bared of wood, the two sites would probably be visible from one another.

The ground is flat, and the site is not conspicuous, being, except to the south-east, below the level of closely adjacent fields.

There are four Stones, all of grey granite, and placed as shown in the ground-plan (fig. 1). The south Stone (A) has fallen forward towards the centre of the Circle; if placed on its base, the diameter of the Circle, due north, measured from the inner face of this Stone to that

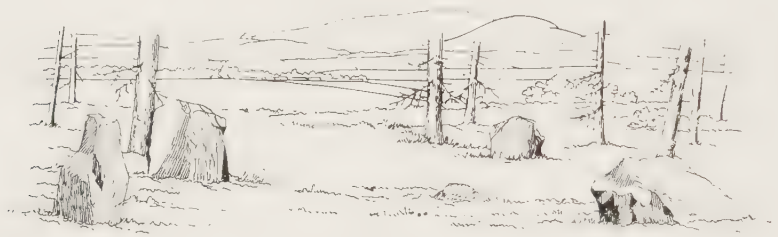

Fig. 2. North Burreldales Circle; View from the West.

of Stone C, would be 21 feet, and the corresponding diameter, east and west, is 20 feet. The west Stone (B) is 3 feet 4 inches in height, with a very slight lean towards the centre. Its top is flat, and 21 inches in breadth. The north Stone (C) is quite vertical, has also a flat top, and is 3 feet 4 inches in height. The east Stone (D) is less regular, a good deal thinner, and stands only 1 foot 9 inches clear of the ground. Near the south Stone, and elsewhere, lie several comparatively small blocks of stone, and the whole of the interior space bears evidence, in its unevenness, of having been disturbed. In the view (fig. 2), I show this group as seen from the west.

Mountblairy estate has already yielded the following relics, as recorded by John Alexander Stuart,[2] who also notices this Circle at Burreldales;

[1] See *Proceedings*, xxxvii., p. 138.

[2] In *Proceedings*, vol. ii., p. 370.

on the farm of Newton, one large Stone marking the site of another Circle, and a Circle on the farm of Wardend; on the Mains of Auchenbadie, close to the Ha' Hillock, a bronze armlet similar to the Belhelvie example in the Museum; and, on the Gallow Hill at Newton, a cinerary urn found in or near a Stone Circle. (See the Catalogue of the Museum, EA 13.) This urn is described and figured by Dr Anderson.[1] The Newton Circle was excavated by the late Mr Morrison of Bognie. The map does not record any Stone either at Wardend or Newton.

*No.* 2. *Mains of Auchenbadie.*—Shown on the map, and correctly, as a site only, on the sloping field north of the farm-steadings, and but a few score yards above a pool on the river Deveron called Thief's Pot. The height above sea-level is 127 feet. The site is $2\frac{1}{2}$ miles N.N.E. of the Burreldales Circle and $1\frac{1}{4}$ mile S.E. of the Kirktown of Alvah. The map records the discovery of "bronze armour" at this site. This probably refers to the armlet already noticed as being found many years ago.

*No.* 3. *Gavenie Braes, Kirkside, Gamrie.*—This site is almost due north of Auchenbadie $2\frac{3}{4}$ miles, but on the eastern bank of the Deveron, and only 1 mile south from the Coastguard station in the town of Banff. The site, 100 feet above the sea, is near the western extremity of a long-extended ridge running east and west towards the river, and sloping to the north. The Stones have been placed on the flattest surface of the ridge. Their present unsightly condition is but another instance of the deplorable want of respect for megalithic remains which has been so prevalent throughout these northern agricultural districts.

Five Stones remain, but only one stands on its original base. The ground-plan (fig. 3) shows two bases, almost contiguous, and at right angles to each other, an arrangement not in keeping with the plans of the Stone Circles proper. The question arises, which of these two Stones, both quite erect, is the more likely to be still *in situ*? This it is, I think, possible to answer by an examination of the Stones themselves and their relative positions. In the ground-plan, the base of the Stone

[1] *Scotland in Pagan Times: The Bronze Age*, pp. 115, 116.

A is that of the less tall of the two monoliths; it is altogether a smaller Stone than Stone B (see the views, figs. 4, 5).

Mineralogically, it is a somewhat uncommon stone, being of a dark greenish-grey schist, very smooth and weather-worn, and full of numerous little warty protuberances of a brownish-grey colour.[1]

The other and more massive Stone (B) is of whinstone, and is so set, with its longer axis east and west, as to be truly in the normal position of the East Pillar of a Circle from which the Recumbent Stone has been removed. The position of the schistose block (A) does not conform

Fig. 3. Gavenie Braes; Remains of Circle; Ground-Plan.

to this arrangement. Therefore, of these two, I consider that it is Stone A that was moved from its original site, but I am unable to suggest where that may have been.

This schistose Stone (A) stands 4 feet 10 inches in height, girths at the base 4 feet 4 inches, and has a pointed top.

The other erect Stone (B), quite vertical, and with broad smooth sides, stands 6 feet 7 inches above ground, has a basal girth of 6 feet 9 inches and a pointed top.

The other three Stones shown in the plan, and in fig. 6, are all prostrate; that lying most to the east is a very coarse laminated whinstone thickly

[1] On examining the specimens in the Banff Museum, I found pieces of the identical rock labelled as Knotted Schist; and there are also specimens from Portsoy and the vicinity of Gavenie Braes in the Museum of Science and Art, Edinburgh.

Fig. 4. Gavenie Braes; View from the East.

Fig. 5. Gavenie Braes; View from the South.

veined with quartz. Its extreme dimensions are: length, 5 feet 8 inches, breadth, 3 feet, and thickness, 2 feet 6 inches. The other Stones are also roughly quartz-veined blocks of whinstone about 3 feet in thickness. There is a distinct stony mound of roughly semicircular contour about this group, the result, no doubt, of many seasons' ploughing, after the removal of the rest of the Stones.

Fig. 6. Gavenie Braes; View from the West.

In the three annexed views these Stones are shown from various points[1] (figs. 4, 5, 6).

Rev. Dr Garden, with regard to another site in this vicinity, writes[2] (in 1692): "I was likewise told by an ingenious gentleman, who lives at

[1] During our drive to Gavenie Braes, we passed two sites named on the map as antiquities. One is *Barbara's Hillock*, a very steeply conical mound, due, I think, entirely to natural causes; the other, *Carlin-Kist-Cairn*, at Boghead, a long, low mound overgrown with broom and brambles. The tenant of the adjoining farm remembered seeing part of the Cairn and a big Standing Stone, but could not say when they were removed. The name Carlinkist is, by the writer in the *New Statistical Account* of Alvah parish, applied to the Stone itself.

[2] *Archæologia*, vol. i., p. 340.

a place called Troup, in the shire of Banff, and parish of Gamrie, that not far from his house, there is a den called the Chapel Den, from one of those monuments [*i.e.* a Stone Circle] which is near by."

From a recently published book[1] I take the following paragraph: "Opposite the top of the Strait Path [in Banff] there was formerly visible a large grey-coloured Grey Stone, which was a popular place of resort, and which has given its name to the adjoining property. The stone is now buried below the surface of the street."

In another local publication[2] it is recorded that, "on the site of the now ruinous windmill overlooking Sandend Bay, stood, up till the year 1760, a Circle of Stones 14 feet high and 60 feet broad [circle-diameter]. A stone coffin and a deer's horn were found in it. Another Circle stood at a hundred paces."

We must therefore include in our enumeration five sites of Circles and Standing Stones not named on the Ordnance maps, and of which only the above brief notes are known.

*No.* 4. *Boyndie Church.*—The map-record here, at a height above sea-level of 183 feet, is of the site of a Stone Circle, close to the south wall of the churchyard. There is now no vestige of any such remains to be seen; but the *New Statistical Account* records that "a huge red Stone used to stand near the manse offices, where a stone coffin was found."

The Rev. J. Ledingham, M.A., the present minister, writes, in reply to inquiries, from the Manse of Boyndie:—

"Dear Sir,—I have seen the notice in the *Statistical Account* to which you refer. I have looked for the stone and coffin again and again, but without success. My impression is that the stone had been broken up and used in building of new offices. The district here is very rich in Stone Circles. A good one on the glebe was cleared off some thirty years ago, much to the disappointment of Sir A. Mitchell."

The *New Statistical Account* mentions a Standing Stone at Buchragie in this parish.

[1] *Illustrated Guide to Banff and Macduff*, 1904.
[2] *The Banffshire Field Club Transactions.*

No. 5. *St Brandan's Stanes.*—The few stones now left of this Circle are at the southern extremity of a long strip of fir plantation running down from Bankhead Farm, at a point 2½ miles south-west of the site at Boyndie Church and half a mile east of the burn of Boyndie. Tillynaught Station on the Great North of Scotland Railway is distant slightly over half a mile on the north-west.

The farm-land is called Templeton, and is so named, I was informed

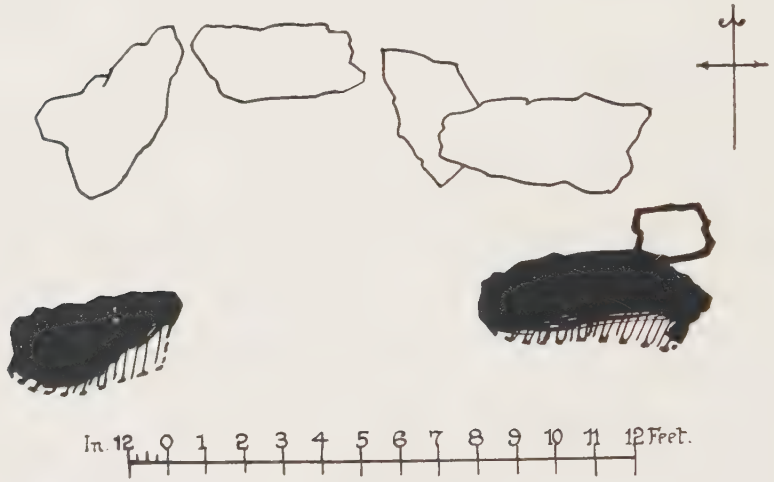


Fig. 7. St Brandan's Stanes ; Ground-Plan.

by the tenant, from these Standing Stones. The site is 300 feet above sea-level.

The ground-plan (fig. 7) shows the positions of the two great Pillars with an interspace sufficient for a Recumbent Stone fully 8 feet in length. Unfortunately, it is not possible to examine the whole bases of these Stones, on account of a huge and unsightly heap of field-wrack being piled up against them on the south. In front lie four large blocks, and close to the east face of the East Pillar is an almost square block, 3 feet in height, and apparently earth-fast, also quite vertical,

which may be the beginning of the inner stone-setting so frequently found in Circles of this type.

Both the Pillars are tall and massive blocks of grey granite, vertically set, and impressive in height and bulk. The East Pillar is 5 feet 5 inches in height, above the small stones covering the ground at its base. Its full height (on the outside) and its girth at the base could not be ascertained, for the reason above stated; but from what of the girth was measurable, that dimension can be estimated to be about 16 feet. Its inner, *i.e.* its northward, face shows signs of having been in modern

Fig. 8. St Brandan's Stanes; View from the North.

times split and robbed of much of its bulk (see fig. 8). Quite probably some of the larger fragments lying close to this part of the Stone once formed a portion of it.

The West Pillar is 5 feet 11 inches in height, and has one very broad, vertical, and smooth face towards the interior of the Circle. It is a more shapely block than its fellow-pillar, and, near its base, displays a well-preserved group of large and deep cup-marks, as shown (drawn to scale) in fig. 9.[1] There are eight distinct cups, and the highest is

[1] In, or before, 1866, this Stone was examined by Dr Black, who records "twelve cup excavations of the usual size" (see *Proc.*, vol. vi., p. 14 of the Appendix). The discrepancy may be accounted for by the growth of grass and weeds around the Stone.

almost precisely in the middle of the breadth of the Pillar. These cup-marks are also noticed by Dr Cramond, of Cullen, in the second volume of the *Transactions* of the Banffshire Field Club.

Of the other Stones, all prostrate, little need be said, except that they are blocks of rugged whinstone, of lengths varying from 5 feet 6 inches

Fig. 9. Cup-marked West Pillar in the Circle called St Brandan's Stanes.

to 3 feet 8 inches, and showing above ground from 16 to 33 inches in thickness.

There was no story obtainable from the tenant of Templeton, bearing upon the name attached to the Stones, or upon the date or alleged reason for the demolition of this Circle.

It is, however, recorded [1] in connection with this locality that, "near the Parish Kirk is a Druid Circle, and another a mile north-east

[1] *New Statistical Account.*

of it, and a third at Bankhead. South of the last, a number of large stones are called *The Brannan Stanes.*"

Of these four sites, only the one above noticed is named on the maps.

*No.* 5. *Thorax, near Culvie, Marnoch.*—The map-record for this is

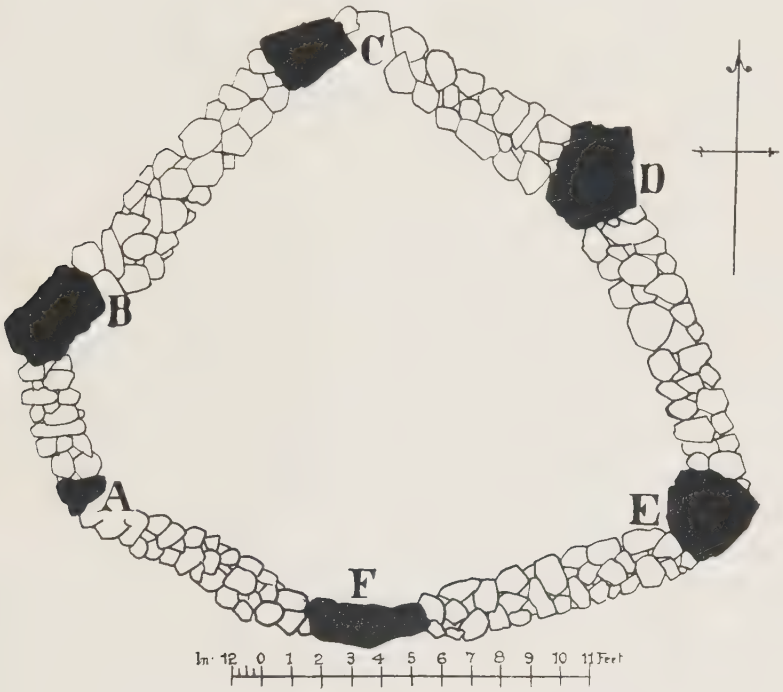


Fig. 10. Thorax Circle ; Ground-Plan.

given at the height of 800 feet above sea-level, on a slightly sloping field about a furlong west of Thorax farm-house, and very near what is now the boundary-dike between the parishes of Ordiquhill and Marnoch. The wooded Culvie Hill is close above it on the west, and below, to the east, is Culvie Moss.

The Stones composing this unsymmetrical Circle are six in number,

and between every couple a dike has been built, and the interior planted with a few small trees. In one respect, this treatment merits commendation, as the conjoined dike assures the security of the Circle Stones, while it, of course, also renders it impossible to measure all round each Stone, and the trees within impede the mensuration of the Circle itself.

The Stones, though differing considerably in size and contour, are all vertically set up, on a circumference which is not that of a true Circle but of a triangular oval figure (see fig. 10), the diameters of which are

Fig. 11. Thorax Circle ; View from the South-East.

22 feet 4 inches (B to E) as against 17 feet 9 inches (A to C), the latter dimension being due north and south.

The heights and characteristics of the Stones are as follows :—

A, 3 feet 7 inches, whinstone, triangular and pointed.
B, 5 ,, 5 ,, whinstone, top sharp-edged.
C, 4 ,, 8 ,, whinstone, rough and thick at the top.
D, 4 ,, 4 ,, grey granite, pointed.
E, 4 ,, 7 ,, ,, ,, rounded.
F, 5 ,, 5 ,, ,, ,, pointed.

The Stones B and D are specially massive, B being 9 feet 8, and D 10 feet 9 inches, in computed girth near their bases.

The distances, measured centre to centre, between the Stones are :—

| | |
|---|---|
| A to B, 6 feet. | D to E, 11 feet 0 inches. |
| B „ C, 11 „ 6 inches. | E „ F, 11 „ 0 „ |
| C „ D, 10 „ 6 „ | F „ H, 10 „ 6 „ |

The general view (fig. 11) was drawn from the outside on the south-east.

Fig. 12. The North-West Stone in Thorax Circle.

The next illustration (fig. 12) shows the inner face of the great Stone on the north-west, with its group of twenty-two cup-marks, the positions of which were all accurately measured, and are here shown drawn to scale.

The largest cups measure 4 inches in diameter, and are about an inch deep. The majority are rather less in diameter, but some are nearly as deep, and all, without exception, are circular and remarkably free from

any alteration in form through weathering or other interference. The absence of grooves is also to be noticed. This Stone is figured on Pl. IV. of Simpson's *Archaic Sculpturings*, App. to vol. vi. of the *Proceedings*.

*No. 7. Brodie Stone, Craigbourach Moor, Marnoch.*[1]—The rugged block of whinstone, known by this name, crowns the summit of the steep moorland here, at the height of about 800 feet above sea-level

Fig. 13. Brodie Stone, Craigbourach Moor.

(see fig. 13). Its longest and straightest side lies due north and south, and it is there 5 feet 4 inches in length.

At the base, the girth is 18 feet 8 inches; measured over the top, in a line from east to west, it is 12 feet 10 inches. The height is 4 feet 6 inches.

[1] During our rambling drive in search of this Stone and others, over an almost trackless moorland, we noticed a huge mass of whinstone outcrop, which, according to the Ordnance map, rejoices in the very odd name of Maggie Redhead. Beyond sundry fissures and ice-markings, there was nothing noteworthy on its hoary surface. Another curious example of local nomenclature exists in the *Court Stone*, over half a mile south of Brodie Stone, and on an extremely wild rocky slope of the same hill. This appellation, printed in the O.M. in Old English letters, is given merely to another vast outcrop of the whinstone. Unless the name *Court* be a corruption of *Corth*, *Cortha*, or *Corthie*, the common forms of the Gaelic word for a pillar stone, and may thus indicate the site of a now lost Standing Stone, there seems no meaning in it.

Though this Stone seems to be fairly well known in the vicinity by the name here quoted, no information reached me in explanation of that point.[1]

*No.* 8. *Marnoch Church, Cairnhill.*—The map-record here is of the remains of a Circle, close to the walls of the church itself, which stands on a gently rising eminence about 250 feet above sea-level. The church is surrounded by a nearly circular wall, and, on the map, this wall is shown as if terminating in the two Stones, on the south, like the extremities of a penannular ring. Some disturbance must have taken

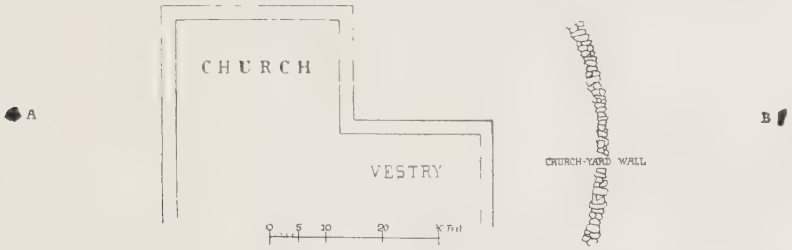


Fig. 14. Standing Stones at Marnoch Church.

place since the Ordnance survey was made, or else the drawing on the Ordnance sheet is far from correct;[2] for the present positions of the two Stones are as shown in my ground-plan (fig. 14, A and B).[3] As

[1] On the southern slope of the moor is a small farm called Brodiefield. It would appear, therefore, as if there were some connection between this Stone and the farm; and, if so, probably their joint history is quite modern. But my reason for including the Stone in the report is that its name occurs on the O.M. in Old English lettering.

[2] In a letter from Rev. Dr Allan, minister of Marnoch, who kindly responded to my request for information on this point, it becomes clear that, on the Ordnance map, what was taken by me for the plan of a Standing Stone was really meant for the "Loupin'-on Stane," which still exists. Dr Allan further remarks that he had never, up to the date of my letter, heard anyone speak of the taller Stone as St Marnan's Chair; but that in the *Banffshire Journal* of the same week, a writer, in describing various objects of interest in the parish, mentions this very Stone and its name.

[3] There are several sites to be recorded in which either a pre-Reformation chapel or an early Established church has been built on or close to the site of a Stone Circle. As far as my notes at present extend, these are at Kinellar, Midmar, Daviot, Culsalmond, Auchleven (Insch), Marnoch, and Boyndie. The present church of Marnoch is not on the site of the older.

the space between them is 135 feet wide nearly north and south, it is hardly probable that they are both *in situ* members of the same Circle. Probably the smaller one (B) on the north has been moved from its original site, on that side, and set up as a rubbing-stone for cattle; and this conjecture receives some support from the fact that this Stone stands outside the wall surrounding the church, and close to the farm-steading.

The great Standing Stone on the south (fig. 15) is called locally

Fig. 15. Standing Stone (A) south of Marnoch Church.

St Marnan's Chair. It is a conspicuously tall Stone, being 8 feet 4 inches in height, and nearly 3 feet in breadth. At its base, it girths 8 feet 5 inches, and at about the middle of its height, it is over 9 feet in girth. It is a squarish-sided block of whinstone, and stands quite erect at a distance of 22 feet from the south wall of the church.

The small Stone on the north (fig. 16), near the farm-steadings, is also of whinstone, somewhat pyramidal in form, 4 feet 7 inches in height, and has a basal girth of 7 feet 1 inch, and a pointed top.[1]

[1] Here the opportunity may be taken to record a fact disclosed to me, during the present survey, regarding the Circle at Rothiemay home farm—my plan of which is

*No.* 9. *Bellman's Wood.*—The remains here, on the farm of Sheep-park, are in a field half a mile north-east of the last. The site is 344 feet above the sea, and there is a bench-mark on one of the Stones. The East Pillar still remains based on its original site, but with a heavy inclination towards the S.S.E. The West Pillar, drawn in thickened outline on the ground-plan (fig. 17), is prostrate, and there is a space left between these two stones for a Recumbent Stone of nearly 10 feet in length. Upon the slight knoll where these Stones

Fig. 16. Standing Stone (B) north of Marnoch Church.

now rest, there are also the five other blocks shown in the plan, all of considerable size and weight, but none large enough to have formed one of the true Standing Stones of the Circle. As a dike runs within 20 feet of the site, on its south, it is probable that the majority of the Stones were, as usual, utilised in building it.

All the Stones are of the blue whinstone common in the locality.

given in the *Proceedings*, vol. xxxvii., p. 134. Close to the gate at the road on the north lies a huge oblong block of whinstone. I was assured by persons on the spot that this Stone had originally stood on the circumference of the Circle several feet to the south of the Recumbent Stone. My plan showed that in this Circle (as in others) this must in all likelihood have been the original arrangement, and this statement confirms my observation.

The East Pillar measures 5 feet above ground, and girths at the base 11 feet 9 inches. It is rudely square in section. The fallen West Pillar is 7 feet 9 inches in full length, 4 feet 9 inches in breadth, and from 2 feet 6 inches to nearly 3 feet in thickness at various points. The thickness of the largest block lying to the north of it is about 2 feet 5 inches. Though the rest of the Stones of this Circle must have extended north-

Fig. 17. Remains of Circle at Bellman's Wood ; Ground-Plan.

wards of the present remains, there is not, on the surface, the slightest indication of their positions; therefore it is presumed that the removal of these megaliths took place at a somewhat distant date.

In the illustrations (figs. 18, 19, and 20) the remains are shown from three different points of view.

*No.* 10. *White Stone, Whitemuir, Marnoch.*—This is recorded on the Ordnance map in Old English lettering, but no further clue is given as to its attribution as an antiquity, or as to its possible association with

Fig. 18. Bellman's Wood Circle ; from the East.

Fig. 19. Bellman's Wood Circle ; from the West.

other stones as part of a group. Locally, it is well known, and is also supposed to cover a hoard of gold.

The site is in a field, near the eastern edge of Bellman's Wood, on the farm of Whitemuir, and is distant from the Circle just described about 900 yards to the N.N.W.

The Stone is a massive block of very pure white quartz. It is only 2 feet 7 inches in height, rudely hexagonal in contour, and measures in girth 12 feet.

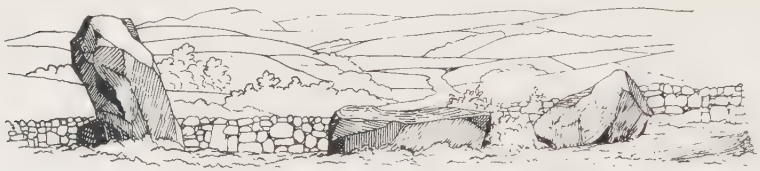

Fig. 20. Bellman's Wood Circle ; from the North.

## II. Sites in Cairnie and Glass, Aberdeenshire.

Before continuing the Banffshire northern sites, it will be here convenient to record all that is known of four sites many miles to the south, in the parishes of Cairnie and Glass.

*No.* 11. *Nether Dumeath, Glass.*—Regarding this site, only the following particulars are now obtainable. Mr James Macdonald, late of The Farm, Huntly, states[1] that the Circle was "about 40 yards in circumference, when perfect; six Stones remain, two are erect and four thrown down, with drill-holes in them. Four have been removed. The Stones measured 7 to 8 feet in length, 3 to 4 feet in breadth, and about 2 feet in thickness."

Quite recently, in a letter from W. J. Grant, Esq., of Beldorney, on whose estate this Circle stood, I received information to the effect that all the Stones had been blasted with gunpowder, by the tenant, and removed. I did not, therefore, after hearing this very explicit account, think it necessary to visit this empty site.

[1] *Place-Names of Strathbogie*, p. 128.

It is clear, however, from the notes taken by Mr Macdonald, that here was once a fine megalithic group of massive Stones, ten in number, set on the margin of a Circle about 40 feet in diameter; evidently, too, from there being no notice of a Recumbent Stone, this Circle belonged to the simple type.

*No.* 12. *Gingomyres, Hill of Milleath, Cairnie.*—Here, $4\frac{1}{4}$ miles to the W.N.W. of Huntly, on a lofty plateau, comparable to but a very few others in the county for extent of view, the Circle-builders had raised the stones of a great Circle.[1] The site, just north of the now wooded summit of Hill of Milleath, and bounded on the west by the still wild and uncultivated Ba' Muir, is level, and being at the almost unique altitude of 900 feet above sea-level, probably commanded views of other Circles on the south and east.[2] It is one mile north of the river Deveron at Mains of Cairnborrow.

All the more vexatious is it to record that, on this remarkable site, not one single Stone, or a fragment of a Stone, has been left to mark the ground set apart here by the prehistoric people.

On recognising the fact that I was assuredly treading on the very site of the Circle, and yet could discern nothing of it, I directed my steps to the nearest dike, and there found over sixty great blocks, their fractures all comparatively recent, utilised as building material. Countless other stones, rounded blocks, and smaller slab-like pieces are also there, all testifying to the fact that, when the Circle was destroyed, it was utterly annihilated.

By inquiry at the neighbouring farm of Blackhill, I ascertained that this wanton act of destruction (committed without any reference to the laird) was effected by one Dick, farmer at Gingomyres, in or about the year 1875.

My informant, who remembered the Circle, said that it measured about 60 feet in diameter, and that the Recumbent Stone was rather over 4 feet in thickness. Mr Macdonald states that it measured 13 feet

[1] It is noticed by Mr Macdonald in *Place-Names of Strathbogie.*

[2] The Circle called *Auld Kirk of Tough* is 300 feet higher.

6 inches by 6 feet. These measurements give a cubical content of 312 feet, yielding, as result, a weight for this Recumbent Stone of 19 tons.

In a notice [1] by Dr John Stuart, printed in 1853, it is recorded of this Circle "that there were three or four Stones only now remaining. A large Stone . . . . lies partly on the ground, and is opposite to the opening to the south or south-east. It is 12 feet long, 6 feet deep, and 14 inches broad. In the centre of the Circle was a flat Stone which is now removed. The surface presented a barren moor-like appearance, while the interior of the Circle was of a rich green colour, which induced the Rev. Mr Cowie, the minister of the parish, to dig downwards, when he found a layer of charcoal and bones of animals."

The great Stone, 12 feet long, must have been the Recumbent Stone; and it is of some interest to note that its position was rather to the east of south. If this observation was correct, this Circle at Gingomyres is the second example, only, having the Recumbent Stone so set. The other is at Old Bourtree Bush, Kincardineshire, surveyed in 1899.[2]

To the west of Blackhill, there are several large Cairns on Cairnmore, the edge of a lofty and desolate moorland. In one of these, partially explored some years ago, an urn of the "drinking-cup" variety was found, and broken in the finding. It is now preserved in the Brander Library at Huntly.

*No.* 13. *Corshalloch, Glass.*—This site is distant from the last described just over 3 miles in a W.S.W. direction. The farmhouse is situated at an altitude of 924 feet above the sea-level, and is about $1\frac{1}{4}$ miles to the north of the Market Inn, on the lower road into Huntly.

The position of the Circle is given on the Ordnance map as within a score of yards to the west of the house. This field, on the day of our visit, was in standing corn, above which there was not visible a sign of any stone whatsoever; and I was assured by the present tenant that there were no stones either set up or prostrate in that field or elsewhere, to his knowledge, on the farm.

In subsequent communication with Mr George Watt, formerly tenant

[1] *Proceedings*, vol. i., p. 141. [2] *Ibid.*, vol. xxxiv., p. 142.

in Corshalloch, and now at Cairnmore, the following scanty particulars were obtained: that the Stones, "as far as he could tell, were taken down and broken up and rebuilt for corners to the new buildings." The date is not mentioned.

*No.* 14. *Edintore House, Cairnie.*—A long strip of fir plantation runs down nearly north and south on the east side of the policies of Edintore, and, at its point of junction with the south end of the Cairds Wood, in the wood itself, there is marked on the map the site of a Circle. Here, again, the Ordnance record is only too correct; for no artificial feature can now be traced on this spot, but a very ill-defined, low, nearly circular ridge rather more green than its surroundings. The site is 3 miles N.N.E. of Corshalloch, and the same distance south of the Established Kirk at Keith. No information was obtainable relative to the former conditions.[1]

## III. Banffshire Sites to the North and the North-West of Huntly.

At this point we leave behind the most westerly sites in this north-western portion of Aberdeenshire, and continue the report on sites in Banffshire, roughly speaking, between the burn of Fordyce and the river Spey.

*No.* 15. *Gaul Cross, Ley, Fordyce.*—The village of Fordyce lies inland from Sandend Bay about 2 miles, and the farm-house of Ley stands high up about a mile and a half to the west of the village. A few hundred yards to the north, on slightly higher ground, there stood once (and not at a very distant date) two Stones Circles[2] about 50 yards apart. Six large Stones stood in the southerly group, which measured 60 feet in diameter. The other Circle was similar, and the Stone that now remains (see fig. 21) was the most westerly of that Circle.

[1] Near Huntly, at Westerton, there is a great outcrop of whinstone, in separate masses, so vertical and so deceptively like Standing Stones that it was only by actual examination that I was convinced of their being solely natural.

[2] From a notice by Dr W. Cramond, of Cullen, in *Banff F. C. Trans.*, vol. ii., p. 92.

"About the year 1830, there were found, about 18 feet south-east of that Stone, at a slight depth below the surface, several articles of silver, consisting of a chain about 4 feet long, and what appeared to the uninitiated like buckles, pins, and brooches. These are now, it is said, all either in the Antiquarian Museum, Edinburgh, or in the possession of the proprietor, Sir Robert Abercromby."

This discovery is also noticed by Stuart[1] as of "relics within a Stone Circle at Gaul Cross in Banffshire."

Fig. 21. Remains of one of the two Circles at Gaul Cross.

Whether found within the Circle or not, these silver objects belong to a much later period than that of the erection of the Stones. Stuart figures[2] three objects: a portion of a silver chain, a fine pin of silver, and an armlet also of silver; and these are all described by Mr George F. Black in his report on the Museum at Banff.[3] The pin is of the type described and figured in my recent notice of the Moredun cist.[4]

[1] *Sculptured Stones of Scotland*, Appendix to Preface, II., lxxxii.

[2] *Ibid.*, Pl. ix.

[3] *Proceedings*, vol. xxii., p. 370.

[4] From inquiries I find that the pin and the chain are still in the Museum at Banff, both, however, being labelled as having been found beside an urn at Gaul Cross. Mrs Cowieson, the curatrix, further states that "on a large card is written, 'An amulet and pin found along with the chain.'" *Amulet* is no doubt a misspelling for *Armlet*. But this object itself is no longer in the Museum.

Dr Cramond further notes that an urn of cinerary type (now in Banff Museum) was found several hundred yards to the east of these two Stone Circles. This discovery is recorded on the Ordnance map.

The one Stone now left (fig. 21) lies semi-prostrate and propped up with small stones placed under its western end. It is a rounded boulder of diorite, about 2 feet in greatest thickness, and measures 6 feet by 3 feet 3 inches. It is in the form of an irregular pentagon, and its girth is 14 feet. The site of these two so closely-adjacent Circles,

Fig. 22. Pittenbrinzean Standing Stone.

400 feet above the sea, would have commanded a wide prospect to the south and east, and towards the sea on the north; but it is closed in on the west by the Pittenbrinzean Woods and the Bin of Cullen.[1]

*No.* 16. *Pittenbrinzean Stone.*—No map, so far as I know, puts this Stone on record. For the knowledge of its existence and its position I am indebted to Dr Cramond. It stands at an altitude of 780 feet, close to the north edge of the Clunehill Wood, at a point half a mile nearly due north of Clunehill, and one mile and a half W.N.W. of Ley Farm. It is situated outside of the wood, which is here bounded

[1] It is of some interest to record that Pennant (*Jour.*, sect. i. p. 159), after describing the Cottown Hill Cairns near Cullen, says: "not far from these are two circles of long stones called Gael Cross."

by a strong wire fence. The Stone is a pyramidal block of whinstone (fig. 22), 2 feet 9 inches in height, tapering sharply upwards from a base 8 feet in girth. Dr Cramond could add no information as to the conjecture of this Stone being the remnant of a group; and it does not seem to be known, commonly, in the immediate vicinity.[1]

*No.* 17. *Core Stanes, Greenbank, Letterfourie.*—This site, in the parish of Rathven, is 3 miles to the south-east of the busy little fishing village of Buckie, and 6 miles due north of the town of Keith. On the south, in the direction of that town, and for many square miles to the westward of it, the maps show no sites of any archæological interest, except one named *Ranald's Grave* in the wood of White-ash Hill, near Fochabers—a site too remote to visit on the occasion of our explorations in Rathven.

At Greenbank, less than a furlong south-east of the present farm-house, the map places the "site of a Stone Circle" at the height of about 500 feet above the sea. On the east flows the now wooded Whitefield Burn, and on the west the Core Burn. Despite the wording of the map-record, and the rumour[2] that many of the Circle stones had been used in the building of Letterfourie House, I hoped to find something tangible on the site. Expectations were, however, again doomed to disappointment; and, although the ground, then in stubble, was carefully gone over, no trace of any Stone or of any mound now remains to mark the spot.[3]

*No.* 18. *Meiklehill Wood, near Newton, Letterfourie.*—"Remains of Stone Circle" is the description on the O.M. at this site. Only one Stone remains. It is close to a sharp angle of the wood, at its extreme

[1] About one mile to the south, and near North Blairock, on the west of the Ha' Burn, is a mound called on the map *Ha' Hillock*, and drawn as a clearly conical oval mound.

[2] See *Old Statistical Account* for the parish of Rathven.

[3] The passage in the *O.S.A.* runs thus: "Druidical temples are common; on the heights of Corridown there was a remarkable one called the Core Stanes, the stones of which were employed in building the new house of Letterfourie. Mr Gordon has searched three of them to the bottom, and found only charcoal and a whitish soft substance, resembling the ashes of wood or of bones."

south end and on its west side, and distant from Core Stanes 1 mile in the direction of W.S.W. The height above sea-level is 500 feet.

The Stone (fig. 23) is an inconspicuous, low, and broad block of light grey quartziferous sandstone, pentagonal in contour, the sides measuring (south) 2 feet 10 inches, (north-west) 2 feet 6 inches, (north) 2 feet 1 inch, (north-east) 2 feet 5 inches, and (south-east) 1 foot 8 inches, thus giving a girth of 11 feet 6 inches. Above the ground, its height

Fig. 23. Remains of Circle in Meiklehill Wood.

is only 1 foot 7 inches, and its longest diameter across the top 3 feet. The view of this Stone is from the south-east. No one in the vicinity was within reach to give any information concerning the removal of the other Stones; but the presence of a drill-hole, made by a mason's "jumper," to a depth of several inches near the centre of the Stone, is highly suggestive of the fate which befell them.

*No.* 19. *Auchintea, Rathven.*—This, also a site only, is situated 2 miles N.N.W. of the last, and about 1 mile E.S.E. of Port Gordon. The fields here are very open and level, and the site is shown on the map a few yards to the north of the public road, at Stonies Bridge

School,[1] at a height of about 40 feet above the sea, and within a furlong of the steadings at Upper Auchintea.

*No.* 20. *Cowiemuir, Bellie, Elginshire.*—At the burn of Tynet, we

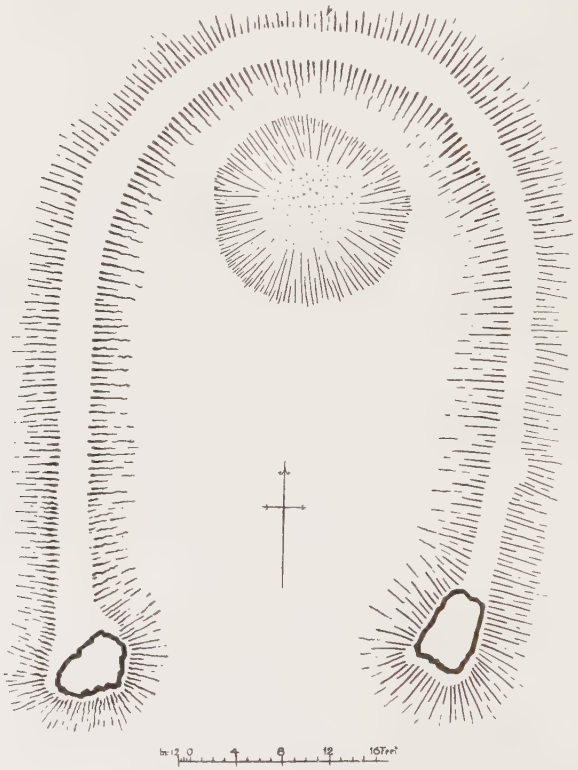


Fig. 24. Remains of Circle at Cowiemuir; Ground-Plan.

cross over from Banffshire into Elginshire, and, three-quarters of a mile due south-west of the stream, at a point where two roads now cross each other, we come upon this interesting and somewhat peculiar relic of a Stone Circle. The distance from the sea-beach at Spey Bay is a bare

[1] Possibly this name carries with it the tradition of the Stone Circle.

mile on the north, and the distance westwards to the river Spey is a mile and a half. The height above the sea is scarcely 50 feet.

Two great Stones still remain nearly *in situ*, and 25 feet apart (see the ground-plan, fig. 24). They lie east and west of each other, and rest on the terminations of an irregularly curved ridge, somewhat of the shape of a horse-shoe. The ridge has an average height of about 2 feet 6 inches over the wide central portion. At the north end, and well within it, is a roughly circular hollow about 17 feet in diameter. It is stony and uneven, and the same epithets may be applied with accuracy

Fig. 25. Remains of Circle at Cowiemuir ; from the East.

to the larger area of bushy ground between the edge of the hollow and the two Stones.

The Stone on the east (the nearer one in the view, fig. 25) is a huge, unshapely mass of conglomerate, furrowed with clefts and fissures, and rough with pebbles and ridges of quartz. It is, I presume, a fallen Stone, and its base was probably its long south edge, which measures 4 feet 2 inches. The opposite edge, on the north, is 2 feet 9 inches wide ; the east side is 6 feet in length, and the west 6 feet 5 inches. As it lies at present, it is 2 feet 6 inches in thickness. Between the two Stones, the ground is flat and more smooth than elsewhere, almost suggestive of its having been used as the most convenient roadway to and from the interior of the Circle when it was destroyed.

The Stone on the west, lying only 8 to 10 feet in from the road-fence, is a rough angular block of red granite, measuring 6 feet 3 inches in greatest length and 4 feet 8 inches in breadth. Its thickness above ground is 3 feet 9 inches, and it is gable-shaped.

The whole length of this site, measured from the crest of the ridge on the north to a point at the middle of the horizontal line of the bases of the Stones, is 55 feet; and the whole width, between the crests of the ridges east and west, 40 feet. If this ridge really carried the other Stones, we should have a pseudo-circular group, the circumference of which is, in contour, comparable only to that of the greater Auchquhorthies Circle at Kincausie, near Aberdeen, which we measured during our first survey.[1] Further, if the spaces between the Stones now lost were the same as that between the two remaining Stones, four others could be placed on the ridge, thus making a complete group of six Stones.[2]

*No.* 21. *Hatton, Aberlour, Banffshire.*—Apart from its being situated on a rising ground near Ben Rinnes, whence a beautiful prospect of a portion of Strathspey is obtainable, this site, now unfortunately very

[1] *Proceedings*, vol. xxxiv., p. 145.

[2] Within a very short distance of this site are the remains of what seems to have been a Cairn-circle, which in Forsyth's *Survey of the Province of Moray* (Aberdeen, 1798) is thus described :—"Upon the farm of Upper Dallachy, about a mile from the shore, there lately was a low conical mount; it was known by the name of the Green Cairn. It remained unviolated till a few years ago. It consisted of about 12 feet deep of rich mould incumbent upon an accumulation of small fragments of stone, mostly of the same height [*i.e.* at the same level], surrounded at the base by a double row of *stones erect similar to the circles of the Druid Temples* [italics mine]. Among this great accumulation of fragments was a stone coffin of unpolished flags: a small quantity of black ashes was its whole contents. Near the circumference, about 2 feet under the surface, was also found an urn, the rude workmanship of the potter, about 8 inches in diameter, and 1 foot in height; and on shaking out the mould with which it was filled, a piece of polished gold appeared, in form like the handle of a vase; it was $\frac{3}{10}$ of an inch thick, its ends about an inch asunder; on them the solder, or the appearance of silver, remained, which, by the application of *aqua fortis*, was dissolved."

This "piece of polished gold" was in reality a penannular armlet of a well-known type. The discovery is noticed by Dr Anderson,* and an armlet corresponding with this, but found at Alloa, is figured.

* *Scotland in Pagan Times: Bronze and Stone Age*, p. 63.

incomplete, has an interesting record. It is one of the very few Circles named in a written record of a date considerably over 200 years ago. In a letter to John Aubrey, from which I have more than once quoted, the Rev. Dr Garden,[1] of Aberdeen, says of this Circle :—

"Another place in the shire of Banff and parish of Aberlour is called *Leachell Beandich*, which, as my informer told me, is as much as the Blessed Chapel, from another of those monuments, which lately stood there, in a cornfield, and is now destroyed."

The date and tenor of Dr Garden's letter to Aubrey both possess interest, because, ere concluding, Dr Garden says: "I have found noth-

Fig. 26. Remains of Circle at Hatton of Aberlour ; from the East.

ing hitherto either in the name of these monuments, or the tradition that goes about them, which doth particularly relate to the Druids or point them out."

This evidence, taken in conjunction with the date, enables us to properly compute the age of the "Druidical theory" regarding Stone Circles. And the name attached to this Circle at Hatton being in its Gaelic form adds another note of interest to the site.

The field where the megaliths formerly stood is on the south of the farm-steadings and at a height of 600 feet above sea-level (fig. 26). The remains now visible on the ground are merely either portions of some of the monoliths, or, more likely still, parts of a circular setting of biggish stones set up edge-wise. Such as they are, they are all carefully set down on the ground-plan (fig. 27), which shows the contour of a well-

[1] *Archæologia*, vol. i., p. 339.

defined mound 36 feet in diameter, and about 3 feet at its highest point above the surrounding field.[1]

As the demolition of the great Stones took place before 1692, there is,

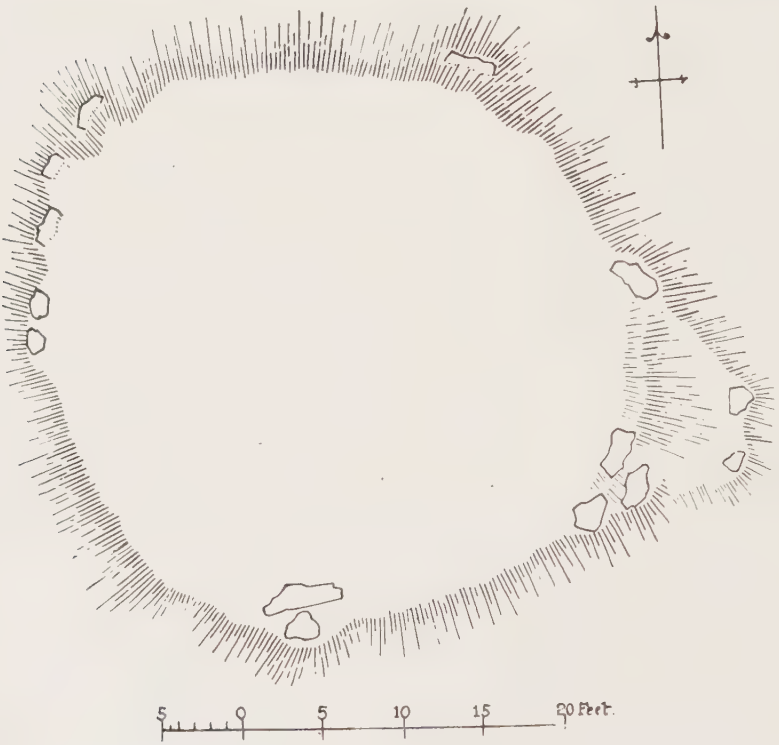


Fig. 27. Remains of Circle at Hatton of Aberlour; Ground-Plan.

of course, no possibility of estimating their number or positions. Of those that still remain on the rim of the mound, only one exceeds 3 feet in length, that on the south verge with a thick broadish block outside of

[1] The tenant told me that the field was called "the doo-cot field"; and this, not because there ever was a dove-cote in it, but because its shape resembled the outline of a dove-cote.

it. It is of grey granite, and is only 10 inches above the ground. The five small blocks on the western side are of about the same height. Of the three larger blocks close together on the east, the two larger are of red granite and are 16 inches above ground; and the smaller of the two on the extreme east slope has the same height.

On the slope near the north-east curve of the mound, there lie five rather large, nearly flat, but not very thick slabs of stone. These, the tenant informed me, were placed there some twelve years ago by his own hands. They had formed the sides and ends of a cist which he found, minus the covering-stone, in the field about 30 feet to the north-east of the edge of the Circle-mound. The cist had evidently been discovered long previously, as it contained nothing but the soil turned up by successive years of cultivation. The side and end stones were carefully removed and placed where they now rest. In its original position, the longer axis of the cist lay nearly east and west. The slabs, which are of red granite and whinstone, measure respectively: one side-stone, 3 feet 2, by 1 foot 4, by about 5 inches in thickness; one end-stone, 1 foot 10 by 1 foot 6; the other end-stone (both of red granite), 2 feet by 1 foot 5. The other side of the cist was made of three broken pieces of whinstone.

The tenant also told me that more than seventy years ago "two, or three, of the great Stones of the Circle were standing," *i.e.* during his father's occupancy of the farm of Hatton.

The Hatton Circle is rather over 1 mile east of the Spey, and 9 miles due west of the site at Corshalloch above described. If this line be taken as the base of an oblong figure 13 miles long north and south, by 9 miles broad east and west, we have an area of 117 square miles richly varied with streams, hills, forests, and glens, yet absolutely devoid now of megalithic remains. It is at the north-west angle of this wide area of romantic Speyside scenery, and at a point $3\frac{1}{2}$ miles west of the Spey, that we find the first of the three sites in the province of Moray, which, as a group, form the limit of our present survey.

## IV. Sites to the West of the River Spey.

*No.* 22. *Innesmill, Urquhart.*—The remains of this great Circle possess several features of special interest. First, as to nomenclature, they are known by three distinct names : viz., *The Deil's Stanes*, *The Nine Stanes*,

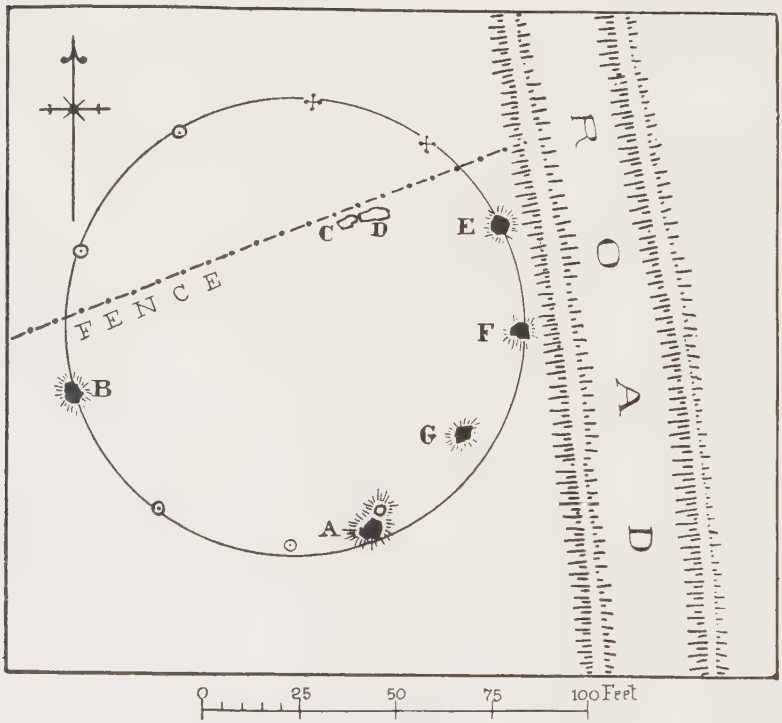


Fig. 28. Innes Mill Circle ; Ground-Plan.

and, simply, *The Standing Stanes of Urquhart.* With regard to the first appellation, this is the first occasion, in Scotland, on which local superstition has connected "the Deil" with a Stone Circle. I was told that the superstition goes a step beyond the mere name, and asserts that if one walk three times round the Stones at midnight, "the Deil" will

appear.[1] *The Nine Stanes* is the name attached to several Circles in Scotland; *e.g.*, to the Circle in Garrol Wood, Durris, Kincardineshire; to another at Invergowrie, near Dundee;[2] to the famous Circle on the Nine Stane Rigg, near Hermitage Castle, Roxburghshire, where, says tradition, the wizard Lord Soulis was boiled to death in molten lead; and to a Circle in Whittinghame, Haddington.

The other principally interesting feature in this Circle at Innesmill is its great size, a point to which full importance will be given presently.

The site is on the west of the road going between Urquhart Station and Viewfield, at a height of 90 feet above sea-level, and 2½ miles

Fig. 29. Innes Mill Circle; from the South-East.

due south of Bear's Head Rock, to the west of Spey Bay. There are five Stones still extant and erect (see fig. 28), and two prostrate, the latter having evidently been moved out of their positions on the north-west arc so as to be either quite out of the way when the fence there was made, or else simply with some regard to keeping all the Stones together as nearly as possible (see the views, figs. 29, 30).

[1] It is true that the name Deil's Stane occurs in many Scottish localities; but in, I think, every such case, the stone is a solitary boulder supposed to have been flung in anger by "the Deil." In England, Devil's Arrows is the name of a group of stones at Borough Bridge, Yorkshire. They are called by Roger Gale "pyramids"—an epithet which leaves us very much in the dark as to their true nature (see *Archæologia*, xxv. 58). Devil's Quoits is the name of a group of three great stones at Stanton Harcourt, Oxfordshire. They are supposed by the writer in *Archæologia* (vol. xxxvii., p. 431) to be "the remains of a Circle nearly 900 yards in diameter." This computation seems to have been reached by estimating from the curve on which the three stones stand. See, however, a plan and notice of the Devil's Arrows, by A. L. Lewis, in the *Journal of the Anthropological Institute*, November 1878.

[2] Stuart, *Sculptured Stones*, vol. i., App. to Preface, p. xxiii.

As will be readily seen from the ground-plan, the space across from Stone B to Stone E is unusually great. It measures within these Stones 115 feet, and therefore constitutes a Circle of outstandingly great diameter, the largest yet measured in the north-east of Scotland. When the measurement is taken, not from the inner faces, but from the centres of the opposite Stones, we obtain the diameter of 120 feet. The circumference of this Circle, when perfect, would therefore have been 362 feet. The heights and characteristics of the Stones are :—

Fig. 30. Innes Mill Circle ; from the West.

Stone A, 6 feet ; red granite, the top ridged.
,, B, 4 feet 10 inches ; red granite, top ridged.
,, C (fallen), 3 feet 10 inches long ; of red granite.
,, D ,, 6 feet 3 inches long ; grey granite.
,, E, 3 feet 5 inches ; grey granite, flat-topped.
,, F, 3 ,, 4 ,, red ,, pointed.
,, G, 5 ,, 6 ,, ,, ,, top ridged.

The distances between the Stones as they now stand, centre to centre, are :—

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Stone A | to | Stone | B, | . . . . | 85 | feet | | |
| ,, B | ,, | ,, | C, | . . . . | 84 | ,, | | |
| ,, C | ,, | ,, | D, | . . . . | 7 | ,, | 6 | inches |
| ,, D | ,, | ,, | E, | . . . . | 32 | ,, | | |
| ,, E | ,, | ,, | F, | . . . . | 27 | ,, | 6 | inches |
| ,, F | ,, | ,, | G, | . . . . | 32 | ,, | | |
| ,, G | ,, | ,, | A, | . . . . | 35 | ,, | | |

If the two Stones, C and D, now prostrate, were placed at the points on the north-east arc marked with a short cross, and the interspacing were equal, we should then have a complete Circle of eleven Stones, leaving a space for a Recumbent Stone of, let us say, 12 feet in length. That this great Circle probably possessed a Recumbent Stone is borne out by the disposition of its stones : the shortest being on the north and north-east arcs, and the taller and much more massive ones towards the south. And there is corroboration of this in the words used by the minister of Urquhart : [1] "Near Innes House are nine tall stones in a circle, two of them at the entrance to the 'altar.'"

The Rev. James Morrison, in referring to Stone Circles in Moray,[2] says, "The largest remaining one, called the Nine Stanes, is incomplete and rude, the stones being just huge unshapen boulders, standing about 6 feet in height. The ground within the Circle has been examined, but there were no traces of graves." But there may have been evidence of burials notwithstanding.[3]

Two illustrations (figs. 29 and 30) show this fine Circle ; the view from the south-east taken from the best point, in order to show clearly its great breadth. In the other, the view from the west, the two fallen stones on the north-east are not shown.[4]

*No.* 23. *Bogton Mill, Lhanbryd.*—The remains here stand on the

[1] *N.S.A.*, vol. xiii. [2] *Trans. Inverness Sc. Society,* vol. ii., p. 44.

[3] In a communication to our *Proceedings* (vol. ix., p. 256) the same writer records that "about half a mile to the north of these [*i.e.* the Nine Stanes] there were, thirty years ago [*circa* 1840], several upright stones of the same character and size, which were broken up and carted away to build cattle sheds."

[4] Through the kindly proffered help of Mr John Geddie, several inquiries of mine connected with this Circle were most promptly answered by his brother, Mr T. Geddie, Mr Taylor and Mr Brown, all zealously interested in the megalithic antiquities of this part of Urquhart and Speymouth. "One of the Stones," writes Mr T. Geddie, "was taken away to be built into a new steading at Viewfield. Mr Brown thinks this was prior to the building of the Innesmill steading, which dates from 1843. No sooner had the Stone been deposited in the 'toon,' however, than uncanny signs and omens began to manifest themselves, and it was resolved to get rid of it. While it was being taken back to its original position, the horse stuck or fell when taking a somewhat steep little brae, and the Stone was taken no further, but buried where it was. The spot is about 80 or 100 yards from the Circle. Mr Brown says that, from

north bank of the mill stream, a quarter of a mile S.E. from the railway station at Lhanbryd, and over 2 miles S.S.W. of the Innesmill Stones. The height above sea-level is 150 feet.

Two Stones only remain, situated as shown in the ground-plan (fig. 31); and, from the manner in which their broader sides face the north and west, we may safely conclude that the area enclosed by the other lost Stones is in that direction. The Stones stand 49 feet apart. The

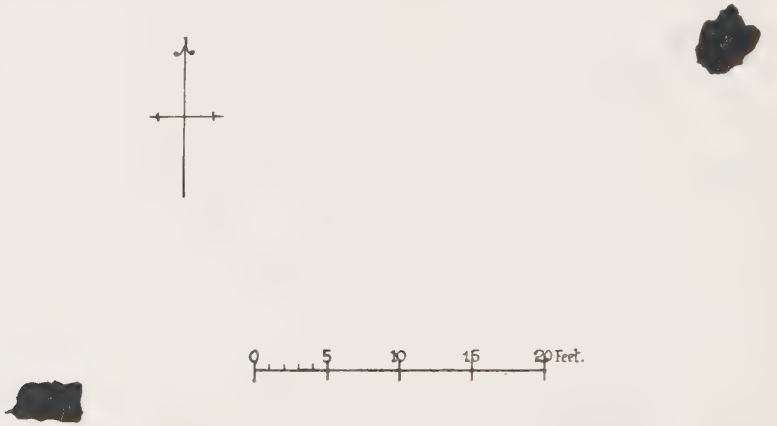


Fig. 31. Remains of Circle at Bogton Mill ; Ground-Plan.

more southerly one is 5 feet in height, and is oblong at the base, where its girth is 13 feet 5 inches. Its rectangularity and bulk continue almost to the top. It is of grey granite mixed with very large crystals of white quartz. The other Stone, which is of similar mineral composition, stands 5 feet 8 inches above ground, and at the base it measures in girth 13 feet 10 inches ; at a height of 3 feet 3, the girth lessens to 12 feet 8 inches.

Views of these Stones are appended in the illustrations (figs. 32, 33).

information supplied by his father and by Mr Anderson of Viewfield, he believes that he would have no difficulty in bringing it to light again.

'One circumstance Mr Brown mentioned which, I think, is worth recording, viz., that a great many flint arrowheads were formerly found within and around the Circle ; but they have been too well hunted, and are now rather rare."

Fig. 32. Remains of Circle at Bogton Mill.

Fig 33. Remains of Circle at Bogton Mill.

It is recorded by Rev. James Morrison that this circle "was destroyed in 1810, to aid in the erection of a bridge."

I must here record the fact that on the Bogton Mill site there yet remain, in addition to the two erect Stones, four other Stones belonging to the Circle. These, however, were at the date of my visit hidden by the growth of turnips. The Stones are prostrate, and deeply sunk into the ground, which, as the name implies, is probably composed of peat.

For these details I am indebted to the courtesy of Mr A. Geddie of Speymouth School, who kindly sent me a measured plan of the present positions of the fallen Stones in relation to the two still erect monoliths —which clearly proved that at some unrecorded date the Stones had been moved out of the Circle and left lying as they now are.

*No.* 24. *Haerstanes, Lhanbryd.*—This site is shown on the map at a point three-quarters of a mile S.S.W. of the last Stones, at about 160 feet above sea-level. On the farm, we heard long-handed-down tradition of the Circle, and the site was, but rather vaguely, pointed out. The only allusion I can find in print is the following, by the Rev. James Morrison:—[1] "We have remains of two so-called Druid Circles, and during the last half-century three others have been swept away. One of these was in horse-shoe form and was called the Haer Stanes."[2]

[1] "Arch. Finds in the East of Moray," in *Trans. Inverness Sc. Society*, vol. ii., p. 44.

[2] With regard to this word, the following notes may be of interest. The name Haer Stane, occasionally, as in the present instance, misspelt *Hair* on the map, also occurs in connection with Stone Circles at Feith Hill, Inverkeithney, near Premnay in Insch, at Stirling Hill, Cruden, at Kirkurd, Peeblesshire, and at Ancrum, Roxburghshire. In connection with Cairns, there are Haer Cairn (where cists and urns were found), near Marcus Lodge, Forfarshire; Hare Cairn, 1000 feet high, site of a tumulus, in Southdean, Roxburghshire; Haer Cairn, where a stone cist was found, at Morganston, Bendochy, Perthshire; the Haer Cairns, a group of six, on the Moor of Gormack, Bendochy. The name Haer Law or Hare Law occurs at Rattray, Perthshire, Eddleston, Peeblesshire (with a kist-vaen on it), at Maxton, Roxburghshire, at Ferry-Port-on-Craig, Fife and Kinross, and at Auchterderran; also on Gladsmuir and at Garvald, Haddingtonshire, the last with a fort on its summit, which is 1200 feet high. We have the word, probably, in still another form, viz. Hairny Law, in Morebattle, Roxburghshire, with a tumulus on it; while Hare Stane occurs on the Boroughmuir, Edinburgh, and Harestane Hill, with the Whitestone Cairn on it, is in Garvald parish.

"These stones were," says the same writer elsewhere, "unfortunately found to lie in the line of a road then formed (1830), and were ignominiously tumbled down the slope on which for ages they had rested, and buried in a gravel pit by the side of the road."

## Conclusion.

Clear classification, where so very few tangible remains are left us, is scarcely possible; but the following deductions seem justifiable. In the very extensive districts passed under review, there are megalithic relics enough to show that Stone Circles, probably of several varieties, formerly existed at North Burreldales, Gavenie Braes, Templeton (St Brandan's Stanes), Thorax, Marnoch Church, Bellman's Wood, Gaul Cross (Ley, No. 1), Meiklehill Wood, Cowiemuir, Hatton of Aberlour, Innesmill, and Bogton in Lhanbryd.

In addition to these twelve, records are extant for Circles at thirteen other sites, viz., at Chapel Den, Newton of Mountblairy, Wardend, near Auds, Boyndie Kirk, Bankhead, Sandend Bay, Gingomyres, Corshalloch, Edintore, Nether Dumeath, Viewfield, and at Haerstanes, Lhanbryd. Out of this considerable number, it is possible to assert of only three of the Circles that they each possessed a Recumbent Stone; although Innesmill Circle most probably possessed that feature also.

On the subject of relics discovered within the area enclosed by the Standing Stones, extremely little evidence is forthcoming as regards the sites surveyed during last September. In the Circle called Corrie-down (or Core Stanes), a quantity of bone-ash seems to have been the main result obtained; while, at Dallachy, the gold armlet, found in an urn beside one of several cists and deposits, still confines the archæological horizon of the Stone Circles to the Bronze Age.

The presence of groups of cup-marks on Stones in the Circles at Templeton and Thorax is also to be noticed. And I may here record a further discovery of a group of five cups on one of the Stones in the

Circle at Rothiemay, which was not observed at the date of my first visit to that site. The cup-marks, which were noted but not figured in Simpson's *Archaic Sculpturings*, occur close to the ground on the Stone standing considerably to the east of the Recumbent Stone. They are large, clearly circular, and about $\frac{3}{4}$ of an inch deep.

These additional localities for cup-marks found on Stones of the Circles bring up the total to twelve.[1]

I append the usual Tabular Summary.

| Name. | Size. | Type of Circle. | Relics. |
|---|---|---|---|
| North Burreldales . | 20′ 8″ × 20′ 3″ | | |
| Thorax . . . | 23′ × 19′ 3″ | | |
| St Brandan's Stanes | ... | Recumbent Stone. | |
| Gaul Cross (North) . | about 60′ × 60′ | | |
| Gaul Cross (South) . | ,, | | |
| Sandend Bay . . | ,, | | |
| Gingomyres . . | ,, | Recumbent Stone. | |
| Bellman's Wood . | ... | ,, | |
| Cowiemuir . . | 55′ × 40′ | ... | |
| Core Stanes . . | ... | ... | Ashes of Bones. |
| Hatton, Aberlour . | 37′ × 35′ | | |
| Innesmill . . | 120′ × 120′ | Probably Recumbent Stone. | Insufficiently examined. |

[1] See *Proceedings*, vol. xxxvii. p. 227.

## IV.

### NOTE ON A COPY OF THE FIRST FOLIO SHAKESPEARE IN THE LIBRARY OF THE SOCIETY OF ANTIQUARIES OF SCOTLAND. By W. K. DICKSON, Secretary.

There is in the Library of the Society a copy of the First Folio Shakespeare, the famous edition of 1623, the existence of which is, I believe, unknown to the public, and indeed to many members of the Society. It is not included in Mr Sidney Lee's "Census of Extant Copies," and apparently there is no record of it in our *Transactions*. It is, so far as I am aware, the only copy in Edinburgh, and (now that the Scott and MacGeorge copies have changed hands) one of the only four copies in Scotland, the others being one in the library of Glasgow University, one in the library of the late Mr A. B. Stewart, Glasgow,[1] and one belonging to Mr W. L. Watson, Ayton, Abernethy. I have noted a few particulars regarding ours.

I need not dwell on the exceeding interest and value of such a possession. Mr Sidney Lee has said of the First Folio that it "forms the greatest contribution made in a single volume to the secular literature of any age or country. By the English-speaking peoples it must always be regarded as the proudest monument of their literary history. Its publication first gave permanent record to the full range of Shakespeare's work. Of the thirty-six plays which appeared in the volume, only sixteen had been printed at earlier dates—fifteen in the author's lifetime, and one, 'Othello,' posthumously. . . . No less than twenty dramas—of which the greater number rank among the literary masterpieces of the world,—nine of the fourteen comedies that were here brought together for the first time, five of the ten histories, and six of the twelve tragedies, were rescued by the First Folio from urgent peril of oblivion. Whatever be the typographical or editorial imperfections of the First Folio, it is the fountain-head of knowledge of Shakespeare's

[1] *Athenæum*, 10th March 1906, p. 300.

complete achievement." "That book," writes Mr W. E. Henley, "is so demonstrably the greatest gift ever made to English letters, that praise too liberal, or gratitude too lavish, to them that made it could not be. Since it came to us life and art have been of another colour, another inspiration, another purpose, than in its absence they must have shown themselves; so that to consider Shakespeare at all is to be for ever beholden to the two playmongers, his yoke-fellows in trade, who with the help (so Mr Justice Madden very plausibly suggests) of Ben Jonson, his comrade in art, did what was in them to secure for their fellow such immortality as is within the provision of paper and print."

During the past century and a half the Folio has vastly increased in money value. It was originally published at the price of £1. In the middle of the eighteenth century a good copy could be bought for £3, 3s. In 1790 the copy now belonging to the Duke of Devonshire at Chatsworth was bought at the Watson-Reed sale by the Duke of Roxburghe for £35, 14s., then considered a great price; it was sold at the Duke's sale in 1812 for £100. During the nineteenth century prices rose steadily, and in our own time the appearance in the market of the American collector has sent them to enormous figures. In 1891 a copy was sold in New York for 4200 dollars—£840—then the record price. In June 1899 Mr Pierpont Morgan bought a copy from a London bookseller for £1000. (Mr Morgan, by the way, owns three copies.) In the following month Mr B. B. MacGeorge of Glasgow paid at Christie's for the Belleroche copy £1700; and in 1901 the Dormer-Hunter copy was bought at Christie's by Mr Bernard Quaritch, junior, for £1720. (Both this copy and Mr MacGeorge's have gone to America.)

I quote the following paragraph from an article recently published by Mr Alfred W. Pollard:—"A Gutenberg Bible and a fine First Folio Shakespeare are now the prizes most valued by Americans. There are five Gutenberg Bibles at present in New York, and I do not know how many First Folios. If these come into the market when their owners die, the game may go on. If they are all left to public institutions, the supply cannot be kept up, and when

copies of the most fashionable books are unattainable private collecting may cease to attract. How near we are to this point it is difficult to guess. In lecturing last autumn I remarked that so far from £1750 being an astonishing price for a First Folio to fetch, it was only its extreme commonness that kept it so cheap; when public institutions had absorbed a few more of the good copies, a really fine example might be expected to fetch £10,000. As I write this article the prediction has already come very near fulfilment by the sale of the MacGeorge set of the four Folios for this precise sum, of which the 1623 edition must be reckoned as accounting for considerably more than half. Since the publication of Mr Sidney Lee's census of copies of the First Folio, it has become evident that, while there are plenty of made-up copies in private hands, the number of fine ones is already approaching exhaustion, and thus we are already within the zone of famine prices." (*Book Lovers' Magazine*, vol. vi., p. 30, Dec. 1905.)

These great prices only apply to fine copies, but even a comparatively inferior copy is a thing of no small value. Mr John Scott's copy, for example, of which all the preliminary leaves and the last leaf had been restored in facsimile, sold at Sotheby's in March 1905 for £255. It may be noted that when "extreme commonness" is predicated of a First Folio, that only means that it is common in comparison with Caxtons and the like. Mr Sidney Lee notes 158 existing copies. Of these only fourteen are classed as being perfect and in unrestored condition, and of these fourteen only six are in private hands on this side of the Atlantic.

Mr Lee's well-known facsimile was issued by the Clarendon Press in 1902. It is a photographic reproduction, page for page, of the Chatsworth copy. In his Introduction and in the annexed "Census of Extant Copies" Mr Lee has collected all available information as to the editing, printing, and publishing of the volume, its typography and bibliography, the reproductions of it which have been produced, and the whereabouts of the surviving copies. All who are concerned with First Folios, or indeed with Shakespearean study in any form, must acknow-

ledge their constant indebtedness to Mr Lee's work. A detailed collation of the Folio is given by Lowndes (*Bibliographers' Manual*, ed. 1863, part viii., pp. 2254–5). It is sufficient here to refer to these authorities.

Our copy has been in the Society's possession for 121 years. The minutes of a meeting held on 2nd November 1784 bear: "There was also presented from Miss Clark of Dunbar Mr William Shakespeare's Comedies, Histories, and Tragedies, published according to the true original copies by John Heminge and Henrie Condell, small folio, the first edition." There is no other record of its history. It has been bound in dark brown morocco, with gilt edges, by Messrs Orrock & Son of Edinburgh, apparently about thirty-five years ago. Mr A. Orrock, the present head of that firm, has been good enough to search their books for any entries relating to it, but without success.

Although not perfect, it is in fairly good condition as First Folios go. It measures $12\frac{1}{8}$ inches in height by $7\frac{7}{8}$ inches in width. (The largest known copy measures $13\frac{1}{2}$ by $8\frac{3}{4}$ in.) The title-page has been re-backed and mended; the first three letters of Shakespeare's name and the imprint at the foot of the page are torn off and have been supplied by the pen. The Droeshout portrait is in fair condition. The lower right-hand corner has been slightly torn, and an injury to the left eye of the portrait has been mended, apparently at an early date—not very skilfully. The fly-leaf has also been re-backed, apparently early; its margins are entirely gone, but the printed portion, facing the portrait, is complete, with Ben Jonson's well-known lines:—

To the Reader.

This Figure, that thou here seest put,
It was for gentle Shakespeare cut;
Wherein the Graver had a strife
With Nature, to out-doo the life;
O, could he but have drawne his wit
As well in brasse, as he hath hit
His face; the Print would then surpasse
All that was ever writ in brasse.
But, since he cannot, Reader, looke
Not on his Picture, but his Booke.

The leaf with the dedication to the Earls of Pembroke and Montgomery is missing, also the first set of memorial verses, "To the Memorie of the deceased Authour, Maister W. Shakespeare," and the List of Actors. The rest of the preliminary matter is complete, namely, the address "To the great Variety of Readers," Ben Jonson's verses "To the memory of my beloved, the Author Mr William Shakespeare, and what he hath left us," the verses by Hugh Holland, and the "Catalogue."

Of the text four leaves are missing, the two first of "Romeo and Juliet" (pp. 53 to 56 of the Tragedies) and the two last of "Cymbeline" (pp. 397–399). These, the end pages of the book, are often missing.

A leaf of the "Comedy of Errors" (Comedies, p. 85) has been somewhat badly torn across the lower corner, and a leaf of "Macbeth" (Tragedies, p. 133), one of "Hamlet" (p. 155), and two of "King Lear" (pp. 287, 289), have the margins considerably torn and soiled. There are a few slight tears on other pages, generally affecting the margin only; I have noted them as affecting the letterpress on the following pages: "Tempest," p. 3, "King John," p. 19, "Henry V.," p. 70, "Julius Cæsar," p. 111, "Lear," p. 283, "Antony and Cleopatra," p. 355, and "Cymbeline," pp. 393, 395. In "2 Henry VI.," at p. 137, there are some very old ink-stains, which look as if an attempt had been made to wash them out with water immediately after they were made. The margins, as usual in the case of old books which have been re-bound, have suffered from the binder's plough; one or two of the running titles have been slightly cut into.

The First Folio was printed with a curious carelessness; it swarms with misprints. The Comedies, Histories, and Tragedies are separately paged, and there are numerous errors in pagination and in the signatures. These are of considerable bibliographical interest, as many of them were corrected while the book was being printed off, and they help us to place any particular copy in the edition. For example, in some of the earlier copies the following misprints occur:—In "The Taming of the Shrew," p. 214 is misprinted 212; in "All's Well," p. 237 was mis-

printed 233; and in "Richard II.," p. 37 was misprinted 39. All these mistakes are corrected in our copy. On the other hand, our copy contains the misprinted signatures Vv instead of V in the Comedies, and 1 3 instead of m3 in the Histories, which were afterwards corrected. It has to be kept in mind that sheets which had been worked off before a correction was made were not destroyed; in making up a copy of the book they were bound up indifferently with others which had been corrected. Thus our copy contains, and the Chatsworth copy does not, the misprint in "King Lear" of p. 307 for 309, and the Chatsworth copy contains, and ours does not, the well-known misprint in "Othello," by which the words "And hell gnaw his bones" are grotesquely misplaced in the dialogue between Roderigo and Iago (Act iv. sc. 2).

The torn leaves which I have mentioned have been carefully repaired. There has, however, been no attempt at restoration or at the insertion of facsimile pages. So far as I can judge, the book, though imperfect, is entirely genuine. The Society is fortunate in its possession, and it is matter for satisfaction that so good a copy is permanently preserved in Edinburgh.

MONDAY, 12*th March* 1906.

DAVID CHRISTISON, M.D., Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows:—

ALEXANDER M. BISSET, Bertha Cottage, Bathgate.
ADAM BROWN, Netherby, Galashiels.
HENRY B. MARSHALL, of Rachan, Peeblesshire.
Dr E. M. MODI, Sleater Road, Bombay, India.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1) Bequeathed by the late HUGH J. ROLLO, W.S.

Chessboard, folding in two leaves, and elaborately inlaid in ivory with portraits and scenes from *Æsop's Fables*.

Table-Clock, in shape of a large watch, the cases ornamented in open work of brass gilt. [See the subsequent communication by Mr A. J. S. Brook.]

Conical Bottle of Clear Glass, 4 inches diameter at the bottom and $7\frac{1}{2}$ inches high, with a crowned monogram cut on one side, and floral scrolls.

(2) By SPENCER G. PERCEVAL, Esq.

Two Perforated Discs of Stone, $3\frac{1}{8}$ inches in diameter and $1\frac{1}{4}$ inches in thickness, and 3 inches diameter and 1 inch in thickness, the perforations about $1\frac{1}{4}$ inches in diameter, and made from both sides; probably weights for digging sticks, from South Africa.

(3) By Rev. Angus Mackay, Westerdale, Caithness, through James Macdonald, W.S., F.S.A. Scot.

Half of a Stone Mould for casting Bronze Spear-heads, found at Langdale, Strathnaver, Sutherlandshire. [See the previous communication by Rev. Angus Mackay.]

(4) By Robert H. Paterson, S.S.C.

Axe of Indurated Sandstone, 6 inches in length and $2\frac{1}{2}$ inches in greatest breadth, polished towards the cutting-edge, found near Dulnain Bridge, Strathspey.

(5) By C. W. Dymond, Hon. F.S.A. Scot.

De Danske Runemindesmaerker, af P. G. Thorsen. Forste Afdeling. Runemindesmaerker i Slesvig. 8vo. Kjobenhavn, 1864.

(6) By the Franco-Scottish Society.

Transactions of the Franco-Scottish Society. Vol. iv. Part 1.

(7) By Ralph Richardson, F.S.A. Scot., the Author.

Scottish Place-names and Scottish Saints. Reprint, pp. 9.

(8) By Rev. William Blair, D.D., F.S.A. Scot.

The Tea-Table Miscellany. By Allan Ramsay. Two vols. (four parts) in one. 12mo.

(9) By J. J. Maclehose & Co., the Publishers.

Old Glasgow Essays. By J. O. Mitchell. 8vo. 1905.
The Scottish Parliament. By C. S. Terry. 8vo. 1905.

(10) By Professor G. Baldwin Brown, the Author.

The Care of Ancient Monuments. 8vo. Cambridge, 1905.

(11) By John Edwards, F.S.A. Scot., the Author.

Duns Scotus: His Life and Times. Reprint, pp. 22.

(12) By the American Historical Association.

Annual Report of the American Historical Association for 1903. Two vols., 8vo.

There were Exhibited :—

By Rev. Mr Macintosh, P.P., through Mr John Bruce, F.S.A. Scot.

Bronze Hilt and Fragments of the Blade of a Double-edged Sword of

Bronze Hilt of a Sword of the Viking time from Eriskay.

the Viking Period, an Iron Spear-head, and a Quadrangular Whetstone, dug up in the Island of Eriskay, by the late Rev. Mr Macdonald, P.P. The bronze sword-hilt (fig. 1) is of a form which is not uncommon in the later Iron Age of Norway, corresponding to the period of the incursions

of the Vikings on the west coast of Scotland. The pommel is five-lobed, the middle lobe being an inch in length and $\frac{5}{8}$ inch in thickness, the others diminishing in size outwards from the centre. The transverse bar, which unites with the lobes to form the pommel, is $2\frac{5}{8}$ inches in length and $\frac{1}{2}$ inch in breadth. A similar form of five-lobed pommel survived in the Western Highlands for centuries, and is found portrayed on the ornamented grave-slabs of Argyllshire. The guard, which is straight, is $4\frac{1}{8}$ inches in length and $\frac{1}{2}$ inch in depth, rounded off at the ends, where it diminishes to $\frac{1}{2}$ inch in width, swelling in the middle to $\frac{5}{8}$ inch in breadth. The double-edged blade has been at least $2\frac{1}{4}$ inches in width at its insertion into the guard. Only a few fragments of its length remain, including the point, which forms an acute angle, with sides about $2\frac{1}{4}$ inches in length, the width of the blade where the point begins to slope being about $1\frac{1}{2}$ inches.

The spear-head is $3\frac{1}{2}$ inches in length, broken off at the neck. It is leaf-shaped and $1\frac{3}{8}$ inches wide in the middle, the lower half of the blade with slightly rounded edges, the upper having the sides tapering in a straight line to the point.

The whetstone is quadrangular in section, $5\frac{3}{4}$ inches in length, $\frac{3}{4}$ inch in breadth, and $\frac{5}{8}$ inch in thickness. It is a fine-grained, slightly micaceous schist, and is much worn by use on all its sides.

The following Communications were read :—

## I.

## NOTES ON THE CHURCHYARDS OF CURRIE, KIRKNEWTON, AND THE CALDERS.

By Alan Reid, F.S.A. Scot. (With Photographs by James Moffat.)

### Currie.

The earliest record of the ancient church of Killeith dates from 1296. In that year, William, Archdeacon of Lothian, and parson of the church of Keldeleth, swore fealty to Edward I.; and, from a *taxatio* of that monarch's reign, we learn that this church, which was dedicated to St Kentigern, was rated at 50 marks, and pertained to the Priory of Coldingham. Till the Reformation, Killeith was regarded as the appropriate benefice of the Archdeaconry of Lothian, changing its status with its name, when, in 1584, James VI. granted to the newly founded college of Edinburgh the vicarage of Currie, with all its endowments. Through this transference the Town Council of Edinburgh became the patrons of the parish, which during the sixteenth and seventeenth centuries was variously styled Killeith and Currie.

Error has arisen from the assumption that the ancient Killeith—now Kinleith—and the later Currie were distinct and separate places. There is not the slightest foundation for that opinion, and within the churchyard of Currie there remains its clearest refutation. Here are the picturesque ruins of an ecclesiastical building, interesting historically and architecturally, and venerable enough to determine the site of the church which, though it changed its name, can only most unreasonably be charged with changing its local habitation. This mediæval fragment undoubtedly formed the choir of the ancient church of Killeith. For many generations it has been used as a place of burial, and its history shows that at a dark period it was the reputed haunt of witches, serving at another time as the school of Currie parish. Its vaulted roof was a source of trouble to the heritors, who were repeatedly charged for its repair. In 1778, they appointed "the upper arch of the Quire to be taken down by day's wages, and the lower arch to stand as it is." Further, that "the lower arch of the Quire be covered by the flag stones,

with a proper gate into the Quire," a deliverance which can only mean that the building was originally covered by an inner and an outer vaulting, the latter roofed with slabs, as at Corstorphine. Presumably the inner arch proved unfit to carry the burden thus imposed upon it, and soon the structure became the roofless ruin which now we see.

From instructions given in 1784 to the builders of the present parish

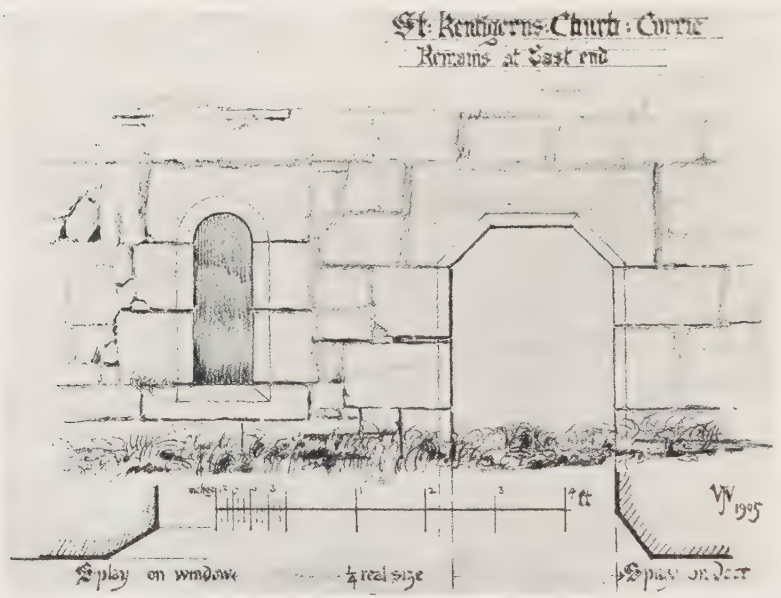


Fig. 1. Remains of ancient Church at Currie.

church, we gather that the ancient sanctuary was an exceptionally long and narrow structure. The ruined choir measures 31 feet in length, 23 feet in breadth, the ivy-clad walls being 9 feet in height and 33 inches in thickness. Repairs have obliterated nearly every detail of ancient work, but the exterior of the south wall shows two remarkable features, a door and a window, built up, but clearly traceable. These have arched lintels hewn from single stones, as shown in the measured

drawing (fig. 1) prepared by Mr John Watson, F.S.A. Scot., who assigns the work to a period not later than the fifteenth century. The sill of the window is now level with the ground outside, and only 3 feet 6 inches of the doorway is there visible. Investigation is difficult through elaborate pointing and the growth of ivy, but it is fairly obvious that the window was splayed towards the interior, and quite clear that both openings are chamfered round ther exterior angles.

Mr R. B. Langwill, who contributed interesting annals of his father's parish to the local supplement of *Life and Work*, observes: "Underneath the pathway to the west of the 'quire,' are traces of masonry showing that the north and south walls are continued in that direction." These foundations point to transeptal buildings, and regarding the built-up door and window Mr Langwill speculates: "Adjoining the 'quire' on the south side, and communicating with it by means of the little doorway already mentioned, there may have been a small chapel or confessional." The idea is attractive, but it is not supported by constructive evidences. The chamfering of the angles points not to interior but to exterior conditions, and the splaying of the window further supports that view. Thus the window was simply one of the choir lights, and the door a means of entrance and exit for those in official positions. In any case, this remnant is of remarkable interest, and worthy of attention, study, and preservation.

Within this enclosure are a number of mural tombstones, the most important of which dates from 1670, and bears the following inscription in Latin:—

HIC SEPVLTVS EST GE
NEROSVS IUVENIS ROBE
RTVS CLYHILLEVS FILIV
S PRIMOGENITVS DOMI
NI DE INNERGOWRIE QVI
HVC ACCEDENS VT AVU
NCVLVM INVISERET HV
JVS LOCI PASTOREM FATALV
FEBRE CORREPTVS 13 AGUSTI
ANNO SALVTIS 1670 AC
ETATIS SVÆ 21 OCCVBUIT

Robert Clayhills, eldest son of the Laird of Invergowrie, near Dundee, is commemorated here. He died of fever in his 21st year, while on a visit to his uncle, the minister of Currie. Some of the details of this mural monument (fig. 2) have suffered, but in the main it is in good

Fig. 2. The Invergowrie Tombstone.

preservation, and of pleasing character. The winged cherub head is particularly good, and the mouldings are excellently wrought. This tablet shows the only armorial bearings to be seen at Currie, most of the neighbouring estates having places of family burial.

The most imposing monument in this churchyard is that of the Rev. Matthew Leighton, an old minister of the parish, and the son of its first

post-Reformation cleric. It is a lofty structure of classic style, and also bears a Latin inscription well worthy of record :—

MATTHÆUS LIGHTONIUS
SEPULTVS EST EVANGELI
QUI PRÆDICANDI MUNERE
ÆSTATIBUS QUAMPLURAMIS
PERFUNCTUS EST FIDELITER
NUNC VITA QUOD PRÆCONIO
RESPONDERIT FRUISCITUR
QUAM PRÆDICABAT GLORIAM

Freely translated, this epitaph records that Matthew Leighton is buried here, who performed faithfully the duty of preaching the Gospel, for as many summers as possible, and that now he enjoys the life which in his preaching he promised, and the glory which he proclaimed. Very evidently this tomb was originally more elegant than now appears, for it collapsed during repairs, consequent on the removal of the old southern wall to which it was attached, and was rebuilt *from memory* by a local mason.

Nearly in the centre of the ground, and in line with the east gable of the church and the Leighton monument, stands a memorial of 1700 (fig. 3), which shows several quaint and unusual features. Whimsical, if not humorous in feeling, are the lines disposed round an initialled oval panel, for they serve admirably as legs and arms to a device whose effect is crowned by the whiskered face, presumably, of the tenant of the tomb.

Under this shield, which is on the west face of the stone, is the inscription—"Heir Lyes John Ingles Husband to Jean Moubray Who Dyed the 10 of November 1700 his age 69 years." The east face shows the cherub-head winged and crowned, a scroll with inscription in Latin, an hour-glass, skull, and cross-bones of the usual type.

Seven paces eastwards is the memorial of George Ferrier, who died in 1721. It shows a winged cherub-head on a moulded pediment, single and crossed spades in the four panels of both flat pilasters, an hour-

Fig. 4. Memorial of Andrew Aken.

Fig. 3. A Whimsical Design.

glass, two death-heads, and the *Memento Mori* legend. There are several stones of this class, which, though they differ in details, do not call for special remark or reproduction.

In design, proportions, and execution, the memorial of Andrew Aken a work of 1708, is really admirable. The east face shows a skull, cross-bones, a star, an inscription, and the initials A. A., a cable moulding being effectively placed on the lower portion of the sloping sides. On the upper portion of the west face, shown in fig. 4, appears a large winged cherub-head, with a couple of cinque-foils, the inscription filling the lower panel, which shows at the upper corners two faces in profile. The date, 1708, is cut over the cherub-head, the *Memento Mori* legend appearing under the inscription.

Very striking also is a monument of 1750 (figs. 5, 6), situated near the centre of the ground, and commemorating "Grizel Anderson, late spouse to Alex$^{r}$ Ranken." Symbolically this slab is quite uninteresting, but it is a singularly fine example of a richly floriated type of memorial common here and in many districts of Scotland. The west face, which shows an iron stayband, is of excellent character, the inscription, of mixed Roman and script lettering, appearing on the east face of the slab.

The coffin-shaped stone lying over the graves of the Napier family is also worthy of notice. It is a very realistic representation of a coffin, having carved handles and other ornamental details, the top being divided into six panels, all of which are inscribed. One of these inscriptions is delightfully naïve :—

"Here lies the corpse of William Napper
Who was a very honest man
His word bound him like writ on paper
Excel him Reader if you can."

In another part of the ground may be read a child's epitaph, dating from 1806, and presenting this curious blend of pathos and bathos :—

"Sweet Mary now her frame is at rest
No more shall Croup her breath annoy
Life's bands are loosed and she is blest
An angel join'd in Realms of joy."

Fig. 6. West face of fig. 5.

Fig. 5. Floriated Design (1750).

Very curious also is the reference to "little souls" in another rhyming tribute within the ancient choir. It seems unique and original in its suggestion that *souls* bear the proportions of the *bodies* to which they belonged :—

"Sweet Innocents, their span of life was short,
But calm and sweet and free from care or thought ;
They early droop'd, as flow'rets droop and die,
And quietly wing'd their little souls on high."

Fig. 7. Recumbent Slab with Sword and Cross.

The so-called Templar Stone (fig. 7) lies seven paces from the centre of the south wall of the modern church. This interesting relic of mediæval times measures 4 feet 10 inches in length, 16 inches in breadth, and is 6½ inches thick. Unfortunately it is fractured, encrusted with lichen, and not so well guarded as its importance warrants. James Grant refers to this stone in his novel *Harry Ogilvie*, and describes

and figures it in his *Old and New Edinburgh*. Unfortunately, again, it has shrunk 14 inches by 8 inches since the measurements were noted in *Old and New Edinburgh*. Its form seems also to have changed, for in the work just cited it appears much wider at the top than at the foot, while *in situ* its sides run parallel.

The distinguished appearance of this memorial among those of post-Reformation type is striking and instructive. In design it is simple and chaste, the absence of name or record intensifying its dignified simplicity. A bead is worked round its upper angles, its ornamentation otherwise being the cross and sword common to monuments of its class. The stemless cross, of Maltese type, occupies a circular panel, round which the roll bead is membranated; and the lines of a scabbard are distinctly traceable by the side of the long, cross-hilted sword.

The insignia of the hammerman's craft, a crown and hammer, appear on one of the few remaining table stones, and other detached symbols, both secular and sacred, are common in the older portion of the ground. The only representative of the sculptured figure type of memorial (fig. 8) is a very curious example. The upper portion of its front or east face is covered by a winged cherub-head, under that being a couple of circular-headed and finely moulded panels, each containing a crude but graphic delineation of the human form. That on the left is clothed, and labelled in Latin, "HOC QUOD JAM FUI"—This is what I was; the other, a skeleton, being charged with the motto, "HOC NUNC SUM"—This now am I. The general effect here is quaint and striking, and has little or no correspondence with the prevalent characteristics of the churchyard otherwise. The back of the slab is covered with lettering. "Here lyes the daughter of Jean Alexander . 1733," it begins, and immediately breaks into a flowing gush of Latin, "Sol Cadet In Fluctus," etc., the gist of which is that, though the sun sinks suddenly beneath the waves, it rises again, but when the light of life flies away, night comes and lasts throughout eternity.

The memorial of Charles Brown (fig. 9), which dates from 1705, shows several peculiar and interesting features. The west face is literally

Fig. 9. A crowd of Symbols.

Fig. 8. "This I was; this I am."

covered with emblems, suggesting that if the artist did not exhaust his art, he certainly exhausted his space. He has crowded into it both the "Memento Mori" and "Remember Death" mottoes, two roses, a cherub-head, two stars, two single bones, a death-head, two sets of cross-bones, one spade, one shovel, and an hour-glass! A couple of cherub-heads adorn the upper angles, the sloping edge between showing

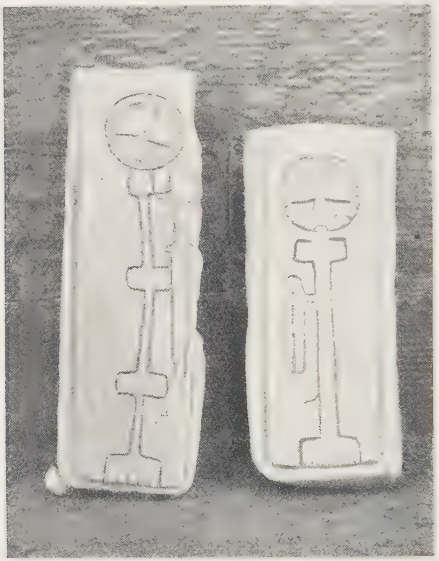

Fig. 10. Calvary Cross-slabs.

the initials C.B. B.P. The east face has some good foliation, and bears within a semicircular panel the quaint epitaph :—

"Death's steps are sure, And yet no noise it makes,
And its hands unseen, But yet most surely takes."

From the archæological point of view the most interesting relics of the past are a couple of small stones (fig. 10) now preserved within the Parish Church. These were discovered a few feet under ground when, in 1898, the grave of the Rev. Dr Langwill was being dug. The larger slab shows a cross in low relief, an articulated bead forming a circular

panel around it; an incised shaft, very crooked, with Calvary, capital, and a couple of projecting steps or sub-bases. A cross-hilted sword appears on the right side of the cross shaft, and a slightly worked bead has surrounded the whole. This stone measures 34 inches long, 11 inches wide, and is 4 inches in thickness. The second stone, which is 4 inches shorter, 13 inches broad, and 5 inches thick, is of a type somewhat less crude than its neighbour. The cross shaft is straight and unbroken, the cross itself standing in a truer relationship to the shaft than in the other example. The device incised here is a pair of shears, and it is not without significance that these are clearly attached to the shaft of the cross. If there is any reason in the theories formulated in explanation of these ancient symbols, a soldier is commemorated by the sword, and an ecclesiastic by the shears, which are regarded as suggestive of the tonsure.

With reference to the modern church nothing need be said except that it is an excellent example of "Heritors' Gothic." Under the shadow of what a local poet terms "Currie's steeple tow'ring to the sky," stands one of the finest specimens of dialling anywhere to be found; and nearly a quarter of a mile due west of it is another memorial of a character surely unique. Within a small plantation on the road to Malleny, the passer-by will find a moulded slab on which is graven the following inscription:—

"In this small Enclosure
are a number of Stone Coffins
of various dimensions. They were
discovered in December 1820, and
this stone is Erected
by the Proprietor
Lieut.-General Thomas Scott
of Maleney
In order to point out the spot, and to
Facilitate the Research of the
Curious into the nature of such
interesting Relics of
Antiquity."

### Kirknewton.

In the year 1750, the parish of Calder Cleir, or East Calder, was conjoined with Kirknewton, a new church being built on a central site for the service of the united congregations. The deserted churches were allowed to fall into decay, and, eventually, their areas became places of family burial. Their old churchyards are still used for interments, Kirknewton Parish Church having no burial ground attached to it; and within these ancient enclosures many valuable relics of the past are to be seen.

The old churchyard of Kirknewton is situated half a mile eastwards of the church—a prominent object in the neighbourhood of Mid-Calder Station—and at the eastern end of the picturesque, old-world village. The site of the ancient church is indicated by a remnant of its walls, which measures 36 feet long, $8\frac{1}{2}$ feet high, and $37\frac{1}{2}$ inches thick. The only elaboration left is a buttress projection, or wall return, the masonry throughout being of the square ashlar type common to mediæval structures.

This old wall forms the east side of the enclosed tombs of the Campbell Maconochies of Meadowbank, now known as Kirknewton House. A modern tablet over the entrance reads—"From 1662 The Burial Place of the Campbell Maconochies, of Meadowbank, Formerly of Inverawe, Till in 1790 the first Lord Meadowbank Selected the present Cemetery in Ratho Parish." This tablet is surrounded by an older framework, in the pediment of which is an oval panel bearing a much-worn monogram.

The fine memorial of Captain James Johnstone of Hill House, who died in 1782, is built into the east side of the ancient masonry. It is a large and well-executed work in classic style, with fluted pilasters, and quaint capitals in which the acanthus leaf, thistles, and roses are intertwined. Under the pediment is a delicate floral scroll, resembling the old Adams ornament of Italian origin.

The imposing tomb of the Cullens of Ormiston occupies the site of

the choir of the ancient church. This elaborate structure is of a modern classic style, slightly Elizabethan in feeling, and of excellent effect. Lord Cullen, "an eminent judge, an elegant scholar, and an accomplished gentleman," lies buried here, as does his father, the celebrated Dr Cullen, whose profile in bronze adorns the western façade of the mausoleum.

Lying near the remains of the church is a remarkable sandstone slab which measures 5 feet in length, 12 inches in breadth, 10 inches in thickness, and having its upper angles very broadly splayed. The top, the splays, and one of the sides show each one line of a rhyming epitaph, which, though much worn, may fairly be recorded as stating, in a strange blend of Roman and Scriptic characters :—

Christ • Jesus • came • my • soul • to • save •
He • is • my • onlye • choice •
Qhilk • causis • me • tho • corpis • in • grave •
In • soule • for • to • rejoice •

Curious and old though that unclaimed memorial undoubtedly is, its interest pales under the venerable supremacy of its near neighbour, the Hog-Back Stone, lately described, figured, and measured by Mr Thomas Ross (*Proceedings*, vol. xxxviii. p. 426). The importance of this notable relic warranted its elevation for a space from its grassy lair, so that the accompanying photograph (fig. 11) might be made by Mr Moffat of its characteristic lines and peculiar ornamentation. Very remarkable and unusual is the single line of membranated ornament appearing along the left side, directly under the lower band of the sloping "shingle." This somewhat resembles the dog-tooth ornament of early work, but inclines strongly to the lozenge or diamond facet, though preserving a character all its own. (Dimensions: 5 feet $7\frac{1}{2}$ inches long, $18\frac{1}{2}$ to $14\frac{3}{4}$ inches wide, 13 inches deep at top, and 12 inches deep (or thick) at foot.)

In the same way it was considered advisable to secure a photographic record of another relic (fig. 12), the figured slab noticed by Dr Christison on page 366, vol. xxxvi. of the Society's *Proceedings*. This small slab

Fig. 12. Headstone with Effigy.

Fig. 11. The Hog-Back Stone.

was lifted from its socket in order that the entire figure should be shown. Its dimensions are 29 inches high, 14 inches broad, and 3½ inches thick; the circular-topped panel being ornamented with a crudely worked bead and cavetto moulding. The sculptured effigy fills the panel, the letters I.L. appearing on either side of its shoulders. From the hair and features the figure might be deemed that of a female, but the sex is indeterminate. The left hand grasps a trefoil, and there are traces of under-cutting round the head and hair which are very quaint, and unusual in such rude sculptures.

There are a number of very interesting details exhibited on the tomb-stone (figs. 13, 14) of James Smith, smith, who died in 1736. The east face bears the incised inscription, which is elegantly framed within a boldly cut leaf ornament, the hammer and crown insignia of the Guild of Hammermen being boldly relieved on the upper portion of the stone. The corners show a death-head and a cherub-head, the cherub appearing in a full-bottomed wig, a curious adornment, and a striking concession to the prevalent fashion of the period.

The west face of this interesting monument shows a recurrence of the foliation, arranged now to emphasise the contour of the pediment. Under it appears the legend VIVE · MEMOR · LETHI., which, being interpreted according to local tradition, refers not to any stream of classic origin, but to the Water of Leith which murmurs near at hand. Then follows a plethora of emblems, an anvil bearing the I.H.S. legend, an hour-glass, a vice, a coffin, a skull and cross-bones, all crudely cut but powerfully realistic, the whole forming a combination of symbolism and realism that could scarcely be excelled.

It seems easy and safe to conclude that the next example served as the prototype of the foregoing memorial. It appears to be generations cruder in point of skill, yet has a sturdy grace of line which has escaped the later designer. Only the date, 1719, and the age, 73, remain clear in the much-worn inscription, and the cherub- and death-heads at the upper angles are also sadly battered. Lying *across* the top of the stone is an hour-glass, an effective and uncommon ornament in

Fig. 14. West Face of fig. 13.

Fig. 13. Cherubs wearing Wigs (50 inches by 28½ inches by 8 inches.)

this position, its ends appearing on both faces of the monument. The photograph (fig. 15) shows the back or west face of the slab, and the elaborate foliation which gives character to the design. The mill-rhynd incised under the upper scrolls, taken in connection with the hammer

Fig. 15. A Millwright's Insignia. (33 inches by 22 inches.)

and axe depicted in the lower portion of the panel, indicates pretty clearly that a millwright is commemorated here.

A round topped stone (fig. 16), dated 1682, shows the common emblems of the miller's calling—the mill-rhynd, a corn shovel, and a pestle. Over these appears a large face, of the portrait type, but poorly rendered; and a well-drawn *fleur-de-lis* showing merit which is not apparent in the cutting of the other symbols. A massive cable

moulding borders the graven panel, the name, John Cruikshanks, appearing on the upper circular edge of the stone.

It would prove tedious to enumerate all the details of this rich field. There are many small tombstones bearing symbols of the same character, heads, cherubs, bones, etc., but only one more (fig. 17) can be regarded

Fig. 16. Art of 1682. (27 inches by 23 inches.)

as of any real importance, and that, again, through the grouping of its crude ornaments. These include a skull, an hour-glass, a horse-shoe, a hammer, and cross-bones, the *Memento Mori* legend appearing over them, just under the slopes of the pediment. The son of John Smith, smith, who died at the age of 10, in 1733, is commemorated here, as in all probability is his father, though that is not stated on the slab.

## Mid-Calder.

The old churchyard of Mid-Calder—the Calder Comitis of other times—is singularly deficient in ancient memorials. Vandalism has been rampant, and has utilised old tombstones to form steps leading

Fig. 17. "John Smith, Smith."

from the ground levels of the beautiful church to the terraces around, the lettering on some of these steps showing quite distinctly. There are many modern monuments, and the mausoleum of the Lords of the Manor, the Sandilands of Torphichen, is an imposing structure, but otherwise the churchyard and the sixteenth-century church seem to have parted company. A cannon-ball of stone, similar to those lying beside Mons Meg at Edinburgh Castle, serves as a link with the

past; and the spirit of the nineteenth-century breathes from the marble tablet erected in 1808 on one of the old buttresses: "To the Memory of David Burn—Let Candour Tell the Rest."

There are several tablets within the church, one of which records: "This church was founded by Peter Sandilands, pastor of Calder before A.D. 1541, and enlarged and restored by the Heritors and Feuars of Mid-Calder, A.D. 1863." Much of the ancient work remains both outside and inside the beautiful building, a full description of which is

Fig. 18. Ancient Pew-back at Mid-Calder.

given in Mr M'Call's History of the parish. Prominent among these ancient remains is an excellent example of a carved pew-back in oak (fig. 18), an engraving of which appears in the work just mentioned. It dates from 1595. Prior to its removal to the manse pew in the eastern end of the church it occupied a central position opposite the ancient pulpit. On the upper portion of the middle panel appear the initials I.S., and I.L., the shield which they support showing a strange rendering of the Sandilands arms, a curious Norman doorway with turrets and flags filling the lower part of the panel. The date and initials R.A.W.

occupy a portion of another panel, the remainder being beaded over their entire length. Scriptural quotations form the legend proper, which is crowned by a semicircular panel showing a thistle ornament arranged in three radiating branches.

It may here be noted that there is preserved in the National Museum the upper portion, or head, of an ancient sculptured cross which was

Fig. 19. A Carpenter's Memorial.

found at Mid-Calder. This fragment shows clear traces of early origin in the disposition of its ornamental lines, which are simply but effectively treated.

The oldest inscription decipherable "among the tombs" is that of Joseph Douglas, "Who depairted this lyfe the 20 day of Aprile anno dom. 1636," but the stone is of no symbolic or artistic interest. Another plain memorial, of 1778, commemorates certain youthful members of the family of Matthew Comb, the inscription concluding

with the fresh and lively quotation: "To die young, said one, is the leaving of a superfloues feast before the drunken cups are presented." The only churchyard remnant of an artistic character is a quaintly designed slab which shows a couple of winged cherub-heads, a skull and hour-glass over the pilasters flanking the undecipherable inscription.

The only other slab that is worthy of record is the memorial of a carpenter (fig. 19), a much-worn monument, now placed against the south wall of the churchyard. The emblems of mortality, a skull and cross-bones superimposed, are of the usual grisly type; a fractured hour-glass leads the thought towards the secular symbols, a square carved in bold relief, and an incised axe. Very evidently the axe was an after-thought (as the design is completely proportioned without it), and has been added to demonstrate that no mere mason lay buried here. A joiner's compass and a spade appear on the other side of this stone, but no date or inscription is traceable.

## East Calder.

The burial ground of St Cuthbert's Church, East Calder, is as rich in graveyard symbolism as its western neighbour is poor. But there is not in this roadside "howff" the variety of design found in many churchyards, a strong family resemblance affecting the whole, and making doubly welcome a trio of notable remnants, the reputed twelfth-century church, the fragment of a mediæval cross built into its western gable, and the massive "Templar Stone" which, in itself, would redeem any site from contempt.

Winged cherubs, life- and death-heads, hearts, bones, and other symbols of mortality abound, and on a comparatively modern monument occurs the only representation of costume to be seen here, a bewigged figure of the Georgian period, supported by a mill-rhynd under an open book, and a coffin over an hour-glass. A very crude stone of 1688 shows several quaint details, among them a curious portrait face. "Mento Morom" is its rendering of the common legend, and it bears three hearts, one of them being inverted. An interesting stone of 1722 shows a

winged cherub, two heads, a heart, and a sand-glass; another old stone shows a couple of single bones, and a coffin in bold relief; another a crude face, crossed ribs, and cross-bones; a small slab, of 1673, exhibiting one of the most archaic incisions of a winged cherub ever made.

Fig. 20. A Typical Example.

A single example of these crude sculptures may be advanced as typical of the whole. The photograph (fig. 20) shows the west face of a sharply pedimented slab, with a deeply moulded panel, well filled with the emblems peculiar to the site. In the upper portion of the panel is a rather pleasant female face, set in a "mutch"-like arrangement of hair, for hair it is meant to be, as its parting in the centre clearly shows. Under that,

and in a line, are a couple of hearts inverted and a couple of ribs intersected, both of these emblems being a distinctive feature of the somewhat insipid and much-rounded sculpture of this churchyard. The east face bears the inscription, the date 1753, a couple of small heads placed *horizontally*, neck to neck—another original feature—a monogram, and a couple of spiral pilasters supporting winged cherub-heads. Serpents ornament the panelled sides, and the slopes of the top bear some rude projections which it is impossible to characterise.

The ancient church of St Cuthbert was founded in the twelfth century, and if the existing roofless but well-preserved building cannot boast of the great age claimed for it by some writers, it certainly is a very venerable structure.[1] The remains of fifteenth-century tracery appear in its east window, the old doorways near it are of contemporary work, and the west gable shows, by the insertion now to be noticed, that it cannot be regarded as being older than these other portions of the fabric.

The west gable of the church might be described as being partly ancient and partly the result of very old repairs. The picturesque belfry is, presumably, of fifteenth-century work, and is a pleasing object both to artist and antiquary; but the great charm of the gable is a remarkable sculptured stone (fig. 21) an insertion which bears clear traces of fourteenth-century influences, and has an appearance at once distinguished and artistic.

This interesting fragment shows very clearly the elaborately carved head of a Maltese cross, with a portion of its stem. This is not only attached to the circular nimbus, but runs right through it to a forked apex, a feature rather unusual in nimbus-bound crosses. Foliation of a somewhat elaborate character springs from the shaft and the nimbus, giving to the whole an effect peculiarly rich and pleasing. The stone measures about 20 inches by 14 inches, and has originally been about 20 inches in width, as may be determined by the proportions remaining.

[1] It measures 70 feet long by 24 feet wide, externally.

The most important relic of the churchyard, however, is a large slab of the coffin-cover type (fig. 22), known as a "Templar Stone," but differing in many respects from the somewhat severe examples of its class already known to us. Perhaps this handsome sculpture might most correctly be regarded as an example of a transitional type of memorial, occupying a fairly definite place between the shrine-shaped tombstones of early periods and the flatter and more ornate slabs of later developments. It

Fig. 21. The Cross in the Gable.

measures 5 feet 4 inches in length, 17 inches in breadth, and 12 inches in depth or thickness. This massive stone is sculptured on all its faces, which are five in number, counting the bevelled angles that give it a pyramidal form. The ends also are splayed and sculptured, that at the west, shown in the photograph, bearing the worn impress of a petalled ornament, not unlike a Gothic quatrefoil.

In all probability this ornament is the head of the cross whose shaft is still fairly traceable along the somewhat narrow top of the stone; and,

if that be so, we have here an example of a cross type that may fairly be regarded as uncommon.

The ornamentation on the splay resembles drapery arranged in a series of loops, the regularity of the design being broken to allow the interpolation of a symbolic feature resembling a pair of shears, and a curious cross-hilted knife or dagger. A twist in the blade adds mystery to the

Fig. 22. A coped, flat-topped Stone.

latter symbol, which may well demand a revised reading. The opposing bevel shows a hand or glove, life-size, with a few worn lines that suggest a sword with an ornamental hilt and, presumably, a scabbard. The flat or base portion of the same side bears the long incised figure of a key, the ward checks appearing quite clearly, though the encrustation and weathering are not very helpful in deciphering the details. No design is apparent on the flat portion of the side shown in the illustration, and the sloping end, not shown, is similarly destitute of

ornament. It is panelled, simply, by the roll bead that runs round all the angles of the stone. The incised carving on the upper or face portion of the slab, unfortunately, is much injured, but what remains suggests either the shaft of a cross or a sword and scabbard. Some inglorious vandal has chiselled clean away about a foot of the upper portion of the design, and on the flat surface thus secured has incised some base initials, thus intensifying one of the most interesting problems connected with the churchyard memorials of the district.

## II.

### STONE-CIRCLES AT GRENISH, AVIEMORE, AND DELFOUR, STRATHSPEY. By C. G. Cash, F.R.S.G.S.

In his *Vacation Notes in Cromar and Strathspey*, 1875, Sir Arthur Mitchell gives a brief account of the Grenish stone-circle. In 1877 Mr Angus Grant, then schoolmaster in Glen Urquhart, but previously resident at Aviemore, read a paper to the Inverness Scientific Society and Field Club, in which he gave an account of several stone-circles, including those at Grenish and Aviemore. James Robertson, in the account of his tour, No. 858 in Sir Arthur Mitchell's List, reports a circle near Aviemore, apparently the Grenish one, as having in 1771 something like a cromlech in the middle; there is now no such structure there. In vol. vii. of the *Proceedings* of this Society, Mr John Stuart reports at the Aviemore circle a flat stone with three cup-marks; this stone seems to have disappeared. Of the Delfour stone-circle a brief account is given in the 1845 *New Statistical Account*; a considerable change seems to have been made in its appearance since that time.

I here record observations made by my wife and me during the spring and summer holidays of 1905, when we spent several days at these circles.

*The Grenish Stone-Circle.*—This circle stands about $2\frac{1}{4}$ miles E.N.E. of Aviemore Station, and about 350 yards east of the nearest point of

the main road, on the south side of the little Lochan nan Carraigean, "Loch of the Standing Stones." The site of the circle seems destitute of any decided features; it is not the highest point of the moorland, nor is it notably an elevation at all. One hundred and forty feet, centre to centre, to the south-east of the circle is a low, almost structureless cairn. This rises about 3 feet above the surrounding ground, has a diameter of about 22 feet, and seems to have been disturbed. On the north side of the lochan is another cairn, showing even less structure, and easily overlooked.

The stone-circle (fig. 1) consisted at one time of three concentric circles; the outer one, of eleven or perhaps twelve megaliths, had a diameter of about 103 feet; the middle one, of stones somewhat closely set, a diameter of about 56 feet; and the inner one, also of stones closely set, a diameter of about 24 feet. The ring enclosed between the second and third circles, about 16 feet wide, is entirely filled with loose stones, to the level of the tops of the set stones of these circles, thus forming a sort of low circular wall, a "ring cairn" as Sir A. Mitchell calls it. The space within the third circle was probably originally left free from loose stones, but now there are many lying in it, but not to any depth. A twin-stemmed pine-tree (A) grows in this inner space. Round the outside of the second circle there is a slight embankment of earth and stones.

The outer circle consisted originally of either eleven or twelve megaliths; of these but two remain, and they are prostrate. The south-westerly one (B) is just over 9 feet long, and has a trapezoidal section with a major diameter of over 3 feet. The more westerly one (C) is 7 feet long, and in section is an oblique parallelogram with a major diameter of 3 feet 7 inches. These have fallen, the first one outwards, and the second one inwards. Sites may be seen for four more (D, E, F, G), slight depressions in the ground, with small loose stones lying near, which I regard as packing to fix and steady the megaliths. Nearly due east of the common centre there is no sign of the former presence of a megalith (H), and the current account is that no stone stood there.

The sites of four megaliths on the northern side cannot be determined because of the growth of long heather, and to the north of east a site is doubtful (J). It seems that nine or ten of the megaliths have been

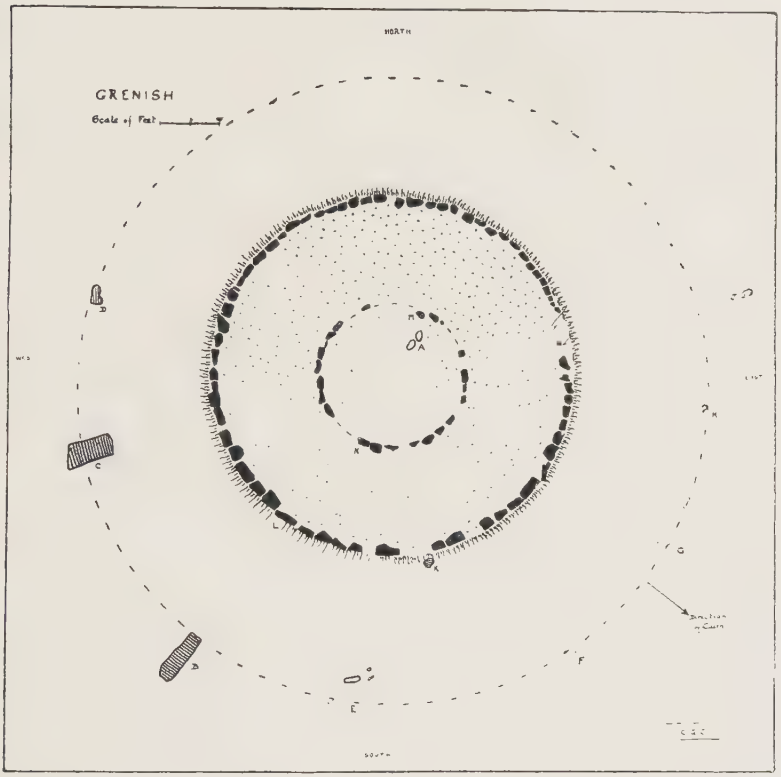


Fig. 1. Stone-Circle at Grenish.

removed, some of them to be used in the foundations of the threshing mill at Aviemore House. In connection with the removal of another of these stones a curious story is told. It was taken to be used as the lintel of the doorway of a byre. When the byre was finished,

difficulty was found in getting the cattle to enter or stay in it; they seemed overcome with fear. The farmer sent for one of the "men" of Duthil, and asked his advice. After religious "exercises" the "man" informed the farmer that the cause of the terror of the cattle was the presence of this stone as the lintel. The stone was removed and an ordinary stone substituted, and thenceforward the cattle occupied the byre in peace!

The second circle consisted of about seventy stones, of which sixty-six are visible in their places, one (K) has slightly fallen from its place, and a few are hidden in the growth of turf. There are three well-marked gaps in the circle: one on each side of the south stone, and one a little to the east. The tallest and most regularly shaped stone of this circle (L) is the fifth one to the west of the south stone. This is a slab of greyish granite, 3 feet 5 inches high, 4 feet 1 inch wide, 1 foot thick, and very regular in shape. No other stone of its circle quite equals it in appearance, but the stone next west from it is not much inferior. In general, the stones diminish in size and shapeliness each way from these two. The decrease is not regular, but is clearly intentional.

The third or innermost circle is much less obviously complete; this is partly due to the overflow of the piling of loose stones. It probably consisted of nearly forty stones, of which twenty-two remain visible in place, and one (M) has been displaced inwards. Here again the tallest and shapeliest stone (N) is in the same common radius with the tallest stone (L) of the second circle, and with the megalith (B) which is said to have been the biggest of the megaliths. Stone (N) is about 2 feet broad, and 10 inches thick. Its height is about 3 feet 6 inches, but probably not more than 3 feet of its inner face was originally exposed.

The stone packing in the ring between the second and third circles consists of loose stones of varied size. The largest I could see weigh about a hundredweight, the least are less than one's fist. In some places they have been howked out; hundreds of them have fallen or been pitched into the inner circular space, and some have tumbled out

through the gaps in the second circle. There is, of course, no actual evidence that this packing is part of the original structure.

Of the cromlech reported by James Robertson there is no remnant.

The authorities of the Seafield estate seem to have no official knowledge of the circle, and there is no provision in the rules of the estate for its protection.

*The Aviemore Stone-Circle.*—The Aviemore stone-circle stands about half a mile north of Aviemore railway station, not more than 60 yards from the high-road, and just behind the United Free Church. As in the case of the Grenish circle, the site is not possessed of any notable features. As far as I know, there are no cairns in the neighbourhood of the circle.

The circle (fig. 2) is in some respects less complete than that at Grenish. Like that one it consisted originally of three concentric circles; the outer one, of detached megaliths, had a diameter of about 75 feet; the second, of closely set stones, a diameter of about 42 feet; and the inner, as to which the evidence is imperfect, a diameter of about 26 feet.

The outer circle probably consisted of twelve stones, for in this case there was and still is a megalith (A) in the eastward place. The south stone (B) stands 4 feet 10 inches high, and has a shape roughly suggestive of a cloaked human figure. The rest of the south-west quadrant has no stone, nor any evidence of the former presence of one. The north-west quadrant has no megalith now standing in its proper place; but there are some large boulder-stones lying against the outside of the second circle, and it is easy to suppose that three of these (C, D, E) may be the somewhat shapeless megaliths rolled inwards. The farm-steading was at one time close to the west side of the circle, and such displacement may well have taken place. There are also some other largish blocks of stone similarly placed (F, G), which probably did not belong to the circle; their fresher surfaces suggest that they were placed here when turned up by the plough, as have been also many smaller pebbles. In the north-east quadrant there are three stones that may have been megaliths (H, J, K), and three others that are probably

intruders (L, M, N). The most northerly of the megaliths (H) lies close in to the second circle, and has, I am informed, probably been recently moved into its present position. The second megalith (J) does not

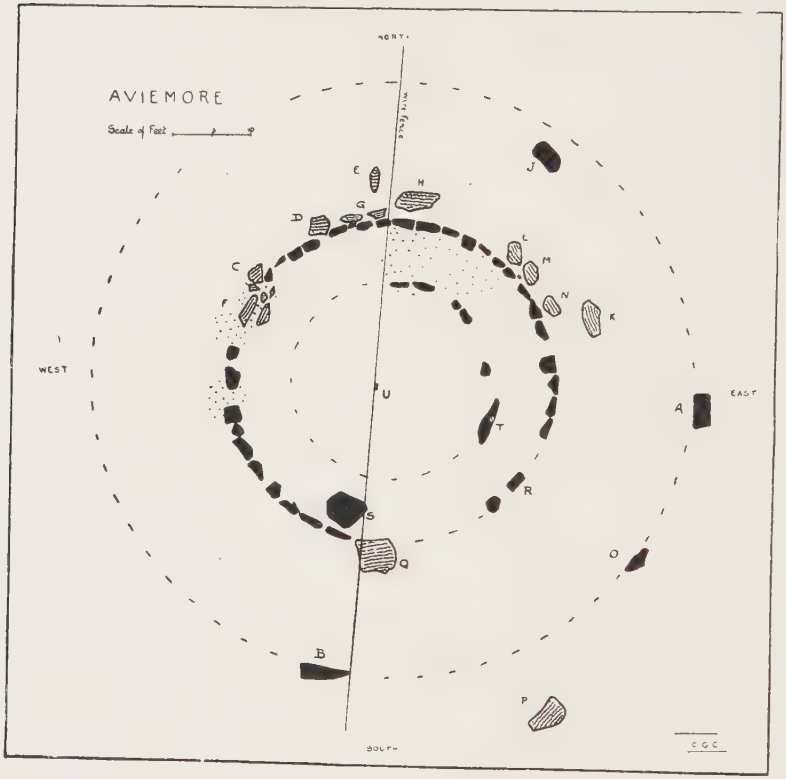


Fig. 2. Stone-Circle at Aviemore.

look as though it had been moved, but it is only 13 feet from the second circle, whereas the south stone is 16 feet 8 inches, and the two easterly ones are 17 feet 3 inches. The third stone of this quadrant (K), a low, flattish block, is only 5 feet from the circle, and has almost certainly been

moved. In the south-east quadrant there are three stones, two (A, O) standing, and one (P) fallen. These are well shaped, somewhat pyramidal blocks, 3 feet 10 inches, 4 feet 9 inches, and 4 feet 9 inches respectively in height. The fallen one has perhaps been shifted some distance outwards, as its nearest point is 23 feet from the second circle.

The second or middle circle is fairly complete. It consists of probably thirty-six stones. There is a considerable gap to the east of the south stone (Q), for which no stones appear, and there is another gap still farther round on that side. It may be noted that the stone to the south of this latter gap (R) is the handsomest of this circle, being 3 feet 3 inches high, fairly regular in shape, and light grey in colour. The tallest stone of this circle is the prostrate south stone (Q). This would be 4 feet high if standing on its base, which is upon the line of the circle. The stones next west from it are also large, standing each 3 feet high, the one 3 feet 7 inches, and the other 3 feet 10 inches wide. No other stone equals any of these four in size, but it can scarcely be said that there is a gradation of size round towards the north. Just behind the south stone, or rather behind its neighbour, is a large shapeless stone nearly a yard high, suggesting the "recumbent" stones found in many stone-circles. There is a slight, irregular embankment round the outer base of this middle circle.

The third circle, the innermost one, is very imperfect. Indeed we found but five, or possibly six, stones to indicate its position, and only one of these (T) is at all elevated. It stands about 2 feet high, but the others barely show above the ground. It is not easy to suppose the former existence of a complete third circle, still less to suppose what Mr Angus Grant asserts, that there was a ring of loose stones here like that at Grenish, for only in the north part of the ring are loose stones present in any notable quantity. Of the cromlech reported by James Robertson there is no remnant. Mr Cree, a member of this society, found what we took to be a "cup-mark" in a loose stone (U) which had been used as a prop for one of the posts of a wire-fence that cuts the circle; the cup is $3 \times 1\frac{1}{2} \times 1\frac{1}{4}$ inches.

It seems evident that this circle has suffered considerable disturbance. It is not easy to account for the removal of stones from the innermost circle—if they ever were there. The megaliths have in several cases obviously been moved, and some of those on the west side have been taken away. It may be noted, however, that while three stones are missing from the south-west quadrant, there seem to be three intruders (L, M, N) in the north-east quadrant.

This circle is on the Seafield estate, and, like the Grenish one, is ignored by the estate officials.

*The Delfour Stone-Circle.*—This circle (fig. 3) stands about 4 miles south-west from Aviemore Station and 2 miles N.N.E. from Kincraig Station. It is about half a mile west of the high-road, and may be approached by a farm-road leaving the high-road a little south of the eighth milestone from Kingussie.

But for the presence of one standing stone (A) of striking appearance, this circle might at first sight be supposed to be merely a heap of loose stones collected from the land around, for there are several such heaps in its neighbourhood. The *New Statistical Account* speaks of an inner circle 25 feet in diameter. This is now completely hidden in a pile of stones that quite fills all the space within the middle circle. I am, however, informed that for at least thirty-five years there has been neither addition to nor subtraction from the pile as it now stands, and that the factor allows no interference with it.

Of the outer circle of megaliths, if it ever existed, only one (A) now remains. This stands at a distance of 22 feet 6 inches to the south-west of the middle circle. It is a remarkably fine slab of quartzite, 9 feet 6 inches high, 1 foot 6 inches thick, 5 feet 6 inches wide at the base, and tapering irregularly upwards, so as to present a rough resemblance to a cloaked human figure.

The main or middle circle is 60 feet in diameter. Of its set stones only twenty-nine or thirty are visible, constituting about five-eighths of the circumference. The entire north-west quadrant and about half of the north-east quadrant show no set stones, these being hidden by the loose

stones, which in many places have been piled right over the retaining wall of set stones. Outside the circle of stones there is a banking of earth and stones, at its widest about 9 feet wide. The highest part of the "cairn"

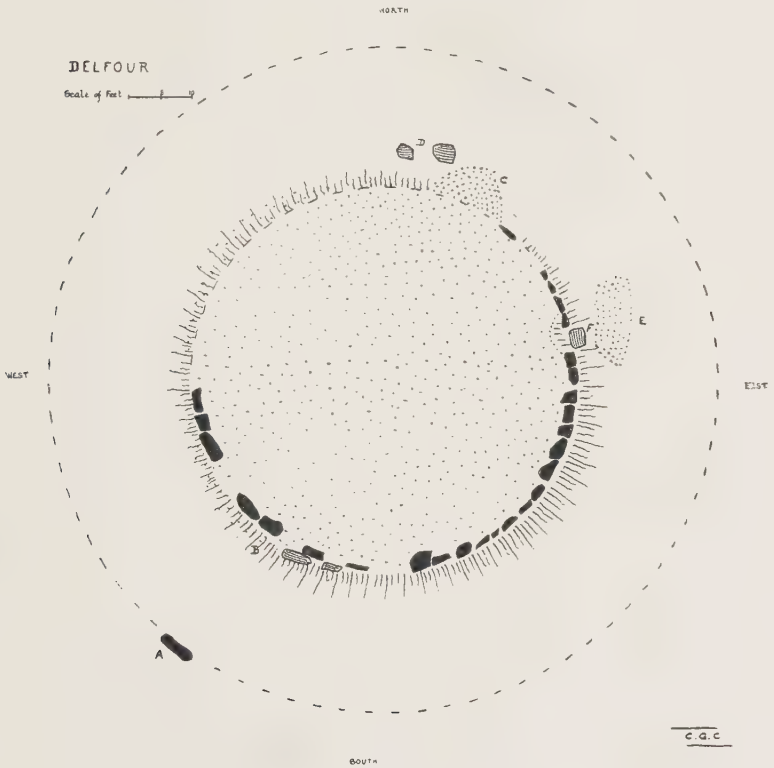


Fig. 3. Stone-Circle at Delfour.

is about 6 feet above the lowest outer base of this bank. As is usually the case, the largest stones of the circle are towards its south-west part, and there is a diminution each way around the circle. The tallest stone, the south-west one (B), stands scarcely 3 feet 6 inches above the bank, and the diminution is carried so far that at about the north-east point the

set stones disappear into the upper surface of the bank, which itself is here much less built up.

Further, the whole surface of the "cairn" drops towards this point, and it is easy to suppose that this was a place of entry for barrows loaded with the collected stones. Such entry would naturally be at the previously lowest point of the circle, and stones so carried and thrown down would make a mound gradually rising from the point of entry towards the remoter parts of the circle. The present appearance of the "cairn" strongly suggests such a procedure.

This involves the complete burial of the third or innermost circle mentioned in the *New Statistical Account*.

Outside the middle circle, on the west side of this "entrance," there is a considerable pile of loose stones (C), looking as old, weathered, and lichen-covered as those of the main pile; and against these are two large blocks (D), whose relation to the general structure is not apparent. Near the east side of the "entrance" there is a pile of fresh-looking stones (E), about which I made special but fruitless inquiries. They are not a very recent addition. Just here one stone of the circle (F) has been forced outwards from its place, and lies on its side, and the loose stones behind it have been much disturbed.

## III.

## TRACES OF THE CULTUS OF THE NINE MAIDENS IN SCOTLAND.

By J. M. MACKINLAY, M.A., F.S.A. (Lond. and Scot.)

The story of the Nine Maidens forms a picturesque chapter in the annals of Scottish hagiology. These Nine Maidens were sisters, daughters of St Donevald, otherwise Donald, a Scot, who settled among the Picts Their exact date is uncertain, but they are said to have flourished early in the eighth century. They lived in what is now the parish of Glamis, in Forfarshire, where St Fergus died later in the same century. Their home there was in the Glen of Ogilvy, now forming part of the possessions of the noble family of Strathmore.

In his *Kalendar*, under 15th July, Adam King has this entry: "The 9 virgines dochters to s. donewalde vnder king eugenius ye 7. In scotland."[1] The tradition is thus given by Bellenden, who, it is to be noticed, assigns *seven* instead of *nine* daughters to St Donevald: "In his (Eugenius's) time was Donevald, the haly man; quhilk levit ane sobir life at Ogilvy, haldin amang Pichtis in gret veneratioun. It is said that he had VII douchteris, quhilk levit with him in gret pennance, on beir breid and wattir. Thay eit nevir bot anis on the day; and the residew thairof occupyit in continewal labour and orison."[2] The names of only two of the Nine Maidens are recorded. Stewart, in his metrical version of Boece's *Chronicles of Scotland*, says:—

> "The eldest hecht Mazota to her name
> The secund sister callit Fyncana;
> Quhat hecht the laif I cannot to zow sa,
> For quhy my author schew thame nocht to me;
> Thair namis now thairfoir I will lat be."[3]

Mazota seems to have been a person of some energy, for we are told that she "maid inhibitation to the wild geis, to eit hir faderis corne, and

[1] Forbes's *Kalendars of Scottish Saints*, p. 157.
[2] *History and Chronicles of Scotland*, bk. ix. ch. xxv.
[3] Vol. ii. p. 329.

thay obeyit hir haly monitionis; and thairfore, wild geis was nevir sene efter on that ground."[1]

This reminds one of St Milburga, who founded a religious house at Wenlock in Shropshire in the seventh century, and is commonly associated with wild geese from her having forbidden them to fly over her land and devour her corn. The memory of St Mazota and her sisters was kept alive in the neighbourhood of their hermitage. Jervise says: "The Nine Maiden Well was near the old dove-cot within the Castle park of Glamis, where probably stood a chapel which was inscribed to these holy sisters."[2]

On the death of their father St Donevald, the Nine Maidens, not wishing to be without a protector, removed to Abernethy near the Earn in Perthshire, still noted for its round tower, akin to the round tower of Brechin, though earlier in date than the latter. What then happened is thus narrated by Bellenden:—

"Thir haly virginis, efter deceis of thair fader, come to Garnard, King of Pichtis, desiring sum place quhare thay micht leif ane solitar life, in the honour of God. Garnard condiscendit to thair desiris and gaif tham ane hous in Abernethy, with certane rentis to be takin up of the nixt landis, to thair sustentation quhare thay leiffit ane devote life and war buryit at the rute of ane aik, quhilk is haldin yit in gret veneration amang the pepil."[3]

What Garnard did for "the Maidens" is thus told in Stewart's metrical version of Boece:—

"At thair requeist ane proper mansioun
He biggit thame into that samin toun,
With kirk and queir, to sing and for to sa
Thair obseruance and ouris of the da.
Thair tha remanit lang and mony zeir,
In fasting, walking, and devoit prayer
With perseuerance to thair latter da."[4]

Baring-Gould tells us that after their father's death the Nine Maidens "are said to have gone to Abernethy, where they lived in a hollow

[1] Bellenden's *Chronicles of Scotland*, bk. ix. ch. xxv.
[2] *Epitaphs and Inscriptions*, vol. i. p. 185.
[3] *Chronicles of Scotland*, bk. ix. ch. xxv. [4] Vol. ii. pp. 329–30.

oak."[1] In his *Menologium Scoticum*, of date 1622, Dempster gives the tradition of his day regarding the Nine Maidens. He says that their names were inscribed among those of the saints, that their abode—an oak—was shown, in the memory of our fathers, full of years, and that their miracles, which had been engraved on the walls of the most ancient oratory, were lately profaned and abolished by the heretics.[2]

Dempster probably meant to indicate that the dwelling-place of the Maidens was at the foot of the oak in question. It is interesting to learn that, even in the seventeenth century, the fame of the oak at Abernethy was such that an enactment was passed by the kirk-session of Glamis forbidding maidens to go to it on pilgrimage.[3]

In treating of the Nine Maidens we are met with certain difficulties of chronology which call for notice. Bellenden says: "Thir virginis war not in time of Conrannus, with Sanct Brigitta, as the commonis haldis, bot in the time of Eugenius the VII; for he perseverit in gud peace with Garnard, and visyit oft times thir virginis with his liberalite and guddis."[4] Eugenius VII. can be fitted into the chronology tolerably well if we do not lay too much stress on the fact that 715 is given as the date of his death,[5] and *circa* 716 as that of St Donevald, when the Nine Maidens went to Abernethy.[6] Garnard is presumably the some as Garnad, a Pictish ruler, who held sway over the district between Scone and Meigle from 706 till 729.[7] His name, or a name resembling it, is assigned to several other Pictish kings. Thus we find

[1] *Lives of the Saints*, s.v., 15th July.

[2] "Abernethæ Donevaldi agricolæ, et filiarum novem Sanctis adscriptarum, quarum domicilium quercus, patrum memoria, ostendebatur annosa, et miracula Ecclesiolæ vetustissimæ parietinis insculpta, ab hæreticis nuper profanata et abolita."—Forbes's *Kalendars of Scottish Saints*, p. 205.

[3] Rev. J. M'Lean's *Translations of the Names of Places in the Deeds of Entail of the Breadalbane Estate*; Dr A. Laing's Introduction, p. 20.

[4] *Chronicles of Scotland*, bk. ix. ch. xxv.

[5] Wyntoun's *Orygynale Cronykil of Scotland*, vol. iii. p. 326. Wyntoun says that Eugenius died at Abernethy, and was buried in Iona.

[6] Forbes's *Kalendars of Scotland*, s.v. "Donald."

[7] Skene's *Chronicles of the Picts and Scots*, pref., p. 126, n.

Garnard, son of Donald, who reigned from A.D. 584 till 599; Garnaid, son of Wid or Foith, whose rule extended from A.D. 631 till 635; and Gartnaid, son of Donnell, a contemporary of King Oswy of Northumbria in the middle of the same century.[1]

The best known of these, though the furthest removed from the time of the Nine Maidens, is Garnard, son of Donald, as it was during his reign that the church of Abernethy, under the influence of St Columba's mission, was dedicated or re-dedicated to St Bridget, Abbess of Kildare, who died in 523. Bower, the continuator of Fordun, tells what he says he found in a certain chronicle of the church of Abernethy,[2] viz., that, after Garnard had built the church there, St Patrick introduced St Bridget into Scotland, with her nine virgins, and offered to God, to the blessed Mary, and to the blessed Bridget and her virgins, all the lands and tithes which the prior and canons have from of old.

In the *Pictish Chronicle*[3] we read that in the fifth year of Nectan, who ruled over the Picts from 457 till 481, the King gave ("immolavit") Abernethy to God and St Bridget till the day of judgment ("ad diem judicii"), and that Darlugdach (called by an anachronism Abbess of Kildare) was present and sang Alleluia over the gift ("cantavit alleluia super istam hostiam").

Dr W. F. Skene observes: "Kildare was, as we know, dedicated to the great virgin saint of Ireland, St Bridget or St Bride, and was the mother-church of all her foundations; but there was within the country of the Picts one church in especial which was also dedicated to St Bride, and was held to be in a manner affiliated to that of Kildare, and that was the church of Abernethy."[4]

[1] *Celtic Scotland*, vol. i. pp. 242, 246-7, 257, 305, 258, 259.

[2] "Garnard filius Dompnach sive Makdompnach, qui fundavit et ædificavit ecclesiam collegiatam de Abirnethy. Postquam illuc introduxit beatus Patricius sanctam Brigidam, sicut in quadam chronica ecclesiæ de Abirnethy reperimus, cum suis novem virginibus in Scotiam; et obtulit Deo et beatæ Mariæ, et beatæ Brigidæ, et virginibus suis, omnes terras et decimas quas Prior et canonici habent ex antiquo." —Fordun's *Scotichronicon*, Goodall's edition, I. p. 188.

[3] P. 6.

[4] *Celtic Scotland*, vol. ii. p. 309.

Special notice has here been taken of St Bridget's connection with the church of Abernethy, inasmuch as the *Aberdeen Breviary* links the story of St Mazota with that of the Abbess of Kildare, thereby removing Mazota to a date earlier than her own. The narrative in the *Breviary* is thus given by Bishop Forbes: "Graverdus, son of Domath, the distinguished king of the Picts, and cousin of S. Brigida, while fighting against the Britons, is supernaturally warned to send for her to Hibernia and to obey her precepts. S. Brigida obeyed the summons, and with nine holy virgins came from Hibernia to Scotia, and settled at Abirnethy close to the Taye on the south, in which place she erected a basilica in honour of Almighty God and the Virgin Mary, in which the king with all his family was baptized. Mazota was the most remarkable of these virgins, and she followed in all things the steps of Brigida. The king of the Picts promised that the church should be dedicated by S. Patrick, at that time dwelling in Scotia, and there Mazota with the other virgins continued to serve God, till they all died and were buried. No tongue can tell the miracles that God in Heaven caused to take place by her agency."[1] We may remark in passing that an interesting reminiscence of St Bride's Nine Maidens was to be met with till recent times in Sanquhar parish, Dumfriesshire, where "it was customary to resort on May-day to St Bride's Well, where each maiden presented *nine* smooth white stones as an offering to the Saint, which correspond in number with St Bride's nine virgin attendants."[2]

The solution of the chronological problem thus raised is evidently to be found in the fact that there are clearly two separate traditions which have become intertwined. There is the tradition that St Bridget had nine maidens as her attendants, and there is the tradition of the Nine Maidens, daughters of St Donevald. In both stories Abernethy appears prominently as the rendezvous of the two sets of maidens, and forms a link between both. We are therefore led to conclude that Mazota has been removed from her own proper

[1] *Kalendars of Scottish Saints*, p. 395.
[2] Brown's *History of Sanquhar*, p. 30.

date, and by a mistake has been attached to St Bridget as one of her companions.

So much for the chronology of the story. We shall now glance at the dedications, first, to St Donevald's daughters collectively, and then to the two eldest individually. As mentioned above, Bellenden assigns to him *seven* instead of *nine* daughters. It is worth noting that at Inverey, in the Braemar district of Aberdeenshire, is a chapel dedicated to "The Seven Maidens."[1] Bishop Forbes, however, is inclined to associate it with the seven daughters of Fergus of Iigh-ingen-Ferghusa, commemorated in the "Martyrology of Donegal" on 24th May;[2] but there is some doubt on the point. In a pass of the Ochils, in Newburgh parish, overlooking Strathearn, is a block of freestone forming the pedestal of the once famous Macduff's Cross; and near it is a copious spring known as the Ninewells, so named, according to the Rev. Dugald Butler, from its connection with the Nine Maidens of the neighbouring Abernethy.[3] In former days the Cross constituted a sanctuary for any one who committed murder in hot blood, and could make good his claim to kinship with Macduff, Earl of Fife, within the ninth degree. When such an one sought refuge at the Cross, he was allowed to atone for his crime by the payment of nine cows and a 'Colpindach' or year-old cow; but, in addition, he had to wash his hands in the water of the Ninewells.

On the outskirts of Dundee is a hamlet called Ninewells; and beside the Whitadder in Chirnside parish, Berwickshire, is an estate bearing the same name. The former may have a relation to the Nine Maidens, but the latter certainly has not. Its name originated in the presence of nine springs on the estate. The Rev. A. F. Smart, minister of Chirnside parish, informs me that "just below the mansion-house there is now such a quantity of water flowing from these into the river Whit-

[1] *Collection of Shires of Aberdeen and Banff*, p. 641.

[2] *Kalendars of Scottish Saints*, p. 447.

[3] *Church and Parish of Abernethy*, p. 149. Forfar has also a Ninewells, *vide* Alan Reid's *The Royal Burgh of Forfar*, p. 248.

adder as might supply a small town." In Mid-Calder parish is a spring known as the Maidens' Well, which Mr J. Russell Walker connects with our Nine Maidens ;[1] but the name of the spring has nothing distinctive about it, and besides, one hardly expects to find such a dedication south of the Forth.

For the chief dedications to St Donevald's daughters we have to look to the shires of Aberdeen and Forfar, where their *cultus* seems to have been specially popular. In the sands near Pitsligo Castle stood a chapel believed to have been dedicated to them, and not far away is, or rather was, a spring bearing their name.[2] Writing in 1870, Dr Pratt remarks: "Patrick Cook tells us that 'a little to the south of the castle is a well of extraordinary fine water. It is called the *Nine Maidens' Well*, and probably takes its name from the nine Muses.'" On this Dr Pratt makes the following comment: "Tradition, however, gives the honour of its dedication to maidens nearer home. It is said that they were the daughters of St Donevald, and that the names of two of them have come down to us." Dr Pratt adds: "But, alas! the Nine Maidens' Well, to whomsoever dedicated, is now a tradition. 'It's just under that sod,' said our kindly and aged guide, as she conducted us to the spot, pointing to some indications of a recently filled ditch; 'an' oh! it was a bonnie spring!' From the quantity of water discharged from a drain near the Castle a fair idea may be formed of the 'bonnie spring' which caused this lament."[3] The church of Tough was under the patronage of the Nine Maidens, and that of Finhaven is thought to have had the same dedication. The latter, of which there is now no trace, occupied a site about a mile from the ruined castle of Finhaven, not far from the junction of the Lemno and the South Esk.

Sir Alexander Lindsay of Glenesk, who died in 1382 on the island of Candia, when on a pilgrimage to Jerusalem, made the rebuilding of Finhaven Church his last public act before leaving home, and assembled

[1] *Proceedings of the Society of Antiquaries of Scotland*, vol. xvii. p. 203.
[2] *Collections of Shires of Aberdeen and Banff*, p. 435.
[3] *Buchan*, pp. 206–7.

his friends at its consecration by the bishop of the diocese.[1] The church was one of the prebends of Brechin Cathedral. The walls of the graveyard were in existence till last century. In 1849, when the graveyard was being trenched, the floor of the church was laid bare and was found to have been paved with plain glazed tiles of the colours of red, blue, and yellow, each about six inches square and an inch thick. On the hill above the site of the church is a spring locally known as the Ninewell.[2] The church of Drumblade had St Hillary as its patron, but on the lands of Chapelton, in the same parish, was a place of worship dedicated to the Nine Maidens. The chapel, which stood on a knoll, had a burying-ground. At the foot of the knoll is a spring still called the Chapel Well. Mr James Macdonald remarks: "In a charter of 1624, conveying the Chapel-Croft, the chapel on Chapelton is called 'lie Ninemadinchapell.' The foundations of the building and the gravestones in the churchyard were removed about forty or fifty years ago to build a farm-steading."[3] The church of Cortachy was dedicated to St Columba; but there was possibly an altar to the Nine Maidens within the building, the Nine Maiden Well being in its vicinity.[4]

In the wood of Logie, about three miles from the church of Auchendoir, is a spring known as the Nine Maidens' Well. The church of the parish was dedicated to St Mary; but there may have been a chapel to the Nine Maidens near their spring, though definite information is lacking on the point. A local tradition, narrated in Macfarlane's *Geographical Collections*, is to the effect that a bear, which infested the district, killed nine maidens beside the well in question.[5] We are told that "the reason why the family of Forbes carries three bears' heads in its arms is, because the first of this family slew a very ravenous bear at Logie, near Castle Forbes, where, at this day, on a stone, the figure of that bear, though rudely carved, is yet seen."[6] A variant

[1] Lord Lindsay's *Lives of the Lindsays*, vol. i. p. 73.
[2] Jervise's *Land of the Lindsays*, pp. 162–4.
[3] *The Place-Names of West Aberdeenshire*, s.v. "Chapelton."
[4] Jervise's *Epitaphs and Inscriptions, etc.*, vol. ii. p. 117.
[5] *Collections, Aberdeen and Banff*, pp. 613–14.
[6] *Ibid.*, p. 611.

of the story introduces a boar instead of a bear, and adds an incident more in harmony with chivalry than with hagiology. This variant is thus given by Jervise: "Tradition says that one of this family killed, near the Nine Maiden Well, a wild boar that devoured nine virgins, with one of whom—named Bes, or Elizabeth—Forbes was in love, and that when he had slain the animal, he exclaimed, 'It's a' for Bes!' This circumstance, according to the legend, gave rise to the surname of *Forbes*."[1] In all this the original dedication of the spring to the Nine Maidens of the Glen of Ogilvy has evidently been forgotten. In the case of the Nine Maidens' Well in Mains and Strathmartin parish, a later legend has likewise served to obscure the early dedication. The romantic story is thus given by Jervise:—

"Long, long ago, the farmer of Pitempan had nine pretty daughters. One day their father thirsted for a drink from his favourite well, which was in a marsh at a short distance from the house. The fairest of the nine eagerly obeyed her father's wish by running to the spring. Not returning within a reasonable time, a second went in quest of her sister. She too tarried so long that another volunteered, when the same result happened to her and to five other sisters in succession. At last the ninth sister went to the spring, and there, to her horror, beheld, among the bulrushes, the dead bodies of her sisters guarded by *a dragon!* Before she was able to escape, she too fell into the grasp of the monster, but not until her cries had brought people to the spot. Amongst these was her lover, named *Martin*, who, after a long struggle with the *dragon*, which was carried on from Pitempan to Balkello, succeeded in conquering the monster. It is told that Martin's sweetheart died from injuries or fright; and the legend adds that, in consequence of this tragedy, the spring at Pitempan was named the Nine Maiden Well, and the sculptured stone at Strathmartin, also St Martin's Stane at Balkello, were erected by the inhabitants to commemorate the event."[2]

The name of the hero probably arose from confusion with that of the patron of the church of Strathmartin, which was dedicated to St Martin by Bishop David de Bernham on 18th May 1249. The Nine Maidens had a chapel in Strathdichty, which probably stood at Pitempan, not far from the spring bearing their name.

We shall now glance at the somewhat meagre traces of the *cultus* of St Mazota and her sister St Fincana. The festival of the former was

[1] *Epitaphs and Inscriptions, etc.*, vol. ii. p. 218.
[2] *Epitaphs and Inscriptions, etc.*, vol. i. pp. 205–6.

celebrated on 23rd December, and, in connection with it, there is a collect in the *Breviary of Aberdeen* in which spiritual blessings are sought through the intercession of blessed Mazota the Virgin (intercedente beata Mazota Virgine tua).[1] The correct rendering of the saint's name appears to be Mayoca: as Mr F. C. Eeles remarks: "The form Mazota seems to be corrupt, and to be due to copyists mistaking *y* for *z* and *c* for *t*."[2] That Mayoca is probably the correct form is countenanced by the fact that to the parish of Drumoak, on the Dee, she supplied not only dedication but name, Drumoak signifying the ridge of St Maok or Mayoca. The alternative name of the parish was Dalmaik. The writer of the article on Drumoak in the *Old Statistical Account of Scotland* observes: "In this part of the country it is almost always called *Dalmaik*. The church and manse are situated by the river Dee, on a haugh (in Erse *Dal*), and near a well which has still the name of '*Saint Maik's Well*.'"[3]

In pre-Reformation times the day of the patron saint was celebrated with due solemnity in the church of Drumoak, and her virtues were fittingly made known to the parishioners.[4] There is difference of opinion as to the festival day of St Fincana. 21st August and 13th October have both been assigned to a saint of that name; and it has been thought that there were two Fincanas—one belonging to the sixth century and another to the eighth.[5] The probability, however, is that there was but one. In the *Martyrology of Donegal*, under 13th October, occurs the name of Findsech or Finnsech, Virgin of Sliabh Guaire in Gailenga, a name slightly resembling that of our saint. The church of Echt was dedicated to St Fincana, and her feast was commemorated there on 13th October. The *Martyrology of Aberdeen* assigns to St Fincana (whom it describes as a virgin, not a martyr) a church in the diocese of Dunblane. One may presume that the reference is to the chapel of St Fink, in Bendochy

[1] *Pars Hyem.*, fol. 22.
[2] *Proc. of Soc. of Antiquaries of Scotland*, vol. xxxiii. p. 450, *n.*
[3] Vol. iii. p. 315.
[4] *Brev. Aberd. Pars Hyem.*, fol. 22.
[5] *Collections, Aberd. and Banff*, p. 636.

parish, Perthshire, which gave name to the estate of St Fink and the hill of St Fink rising to the height of 918 feet above the sea. The name appears as *St Phink* in the *New Statistical Account of Scotland*, where we read: "There was anciently a chapel at *St Phink*, dedicated to that saint, a small part of the foundation of which still remains. It had been surrounded with a burying-ground, out of which the present proprietor's father dug some human skulls, inclosed between four square stones."[1] The lands connected with the chapel lay to the east of the confluence of the Ericht and the Isla.[2]

The Nine Maidens, in virtue of their being sisters, are unique in Scottish hagiology; but it is not uncommon to find maidens associated in groups. Thus in the train of St Boniface a certain number of bishops and other clerical attendants are mentioned along with two virgins, Crescentia and Triduana. In one of the legends of St Regulus reference is made to three virgins from Collossia, viz., Triduana, Potentia, and Cineria.[3] In connection with the early ecclesiastical settlements at St Andrews, we are told that in the church of St Muren were fifty virgins of the blood-royal dedicated to God, and veiled eleven years.[4] In the last instance is clearly indicated the germ of that conventual life which we find fully developed in the later mediæval nunnery. That the story of the Nine Maidens and their father laid hold on the imagination of the dwellers in the North-East of Scotland, is indicated by a salutation made in quite modern times to a Buchan farmer who had nine daughters: "James, James, good luck to you! you are as rich as St Donevald."[5]

[1] *N.S.A.*, *Perth*, p. 1188.

[2] *O.S.A.*, vol. xix. p. 359.

[3] Skene's *Celtic Scotland*, vol. i. p. 277, and vol. ii. p. 275.

[4] *Chronicles of Picts and Scots*, p. 187. On the Continent we have St Ursula and her 11,000 virgins, who, according to a wildly romantic legend, were martyred by the Huns at Cologne (Baring-Gould's *Myths of the Middle Ages*, pp. 317–40).

[5] Pratt's *Buchan*, p. 206, *n.*

## IV.

NOTES ON A BRASS TABLE CLOCK BEQUEATHED TO THE SOCIETY OF ANTIQUARIES OF SCOTLAND BY THE LATE HUGH J. ROLLO, W.S., AND A SILVER-CASED TABLE CLOCK BEQUEATHED TO THE SOCIETY BY THE LATE LADY JANE DUNDAS. By ALEXANDER J. S. BROOK. F.S.A. Scot.

The Society of Antiquaries of Scotland received last year, by a bequest of the late Hugh J. Rollo, W.S., a large gilt brass clock; and also, in April 1898, by a bequest of the late Lady Jane Dundas, a silver alarum repeating clock-watch.

There is neither an authentic history nor even a traditional story attached to these, and the subject is perhaps more suitable for a horological society; but as the clocks in themselves are exceedingly interesting, and are exhibited in our Museum, they have been thought worthy of being described.

The first of them is in the shape of a large watch, and measures $5\frac{1}{2}$ inches in diameter, $3\frac{1}{2}$ inches thick, and weighs about 7 lbs. avoirdupois (fig. 1). It has a gilt brass case, elaborately pierced and engraved all over, the primary purpose of the pierced work at the back and rim being to emit the sound freely.

Both the back and front are domed, the front cover where the glass of a watch is usually fixed being very open and pierced by a series of eccentric circles. On the back (fig. 2) is a circular shield decorated with a battle- or siege-scene in cast relief work, surrounded by a border of pierced ornament of a slightly Gothic character. There is attached to the rim a loop and ring for suspending the clock.

The dial is gilt brass, elaborately chased and engraved. Outside the hour chapters is a large circle divided into four, with little brass knobs at each quarter, and these quarters are again divided into fifteen subdivisions to represent the minutes. The hour chapters are in ordinary Roman figures inside the quarter circle, and they also have little brass

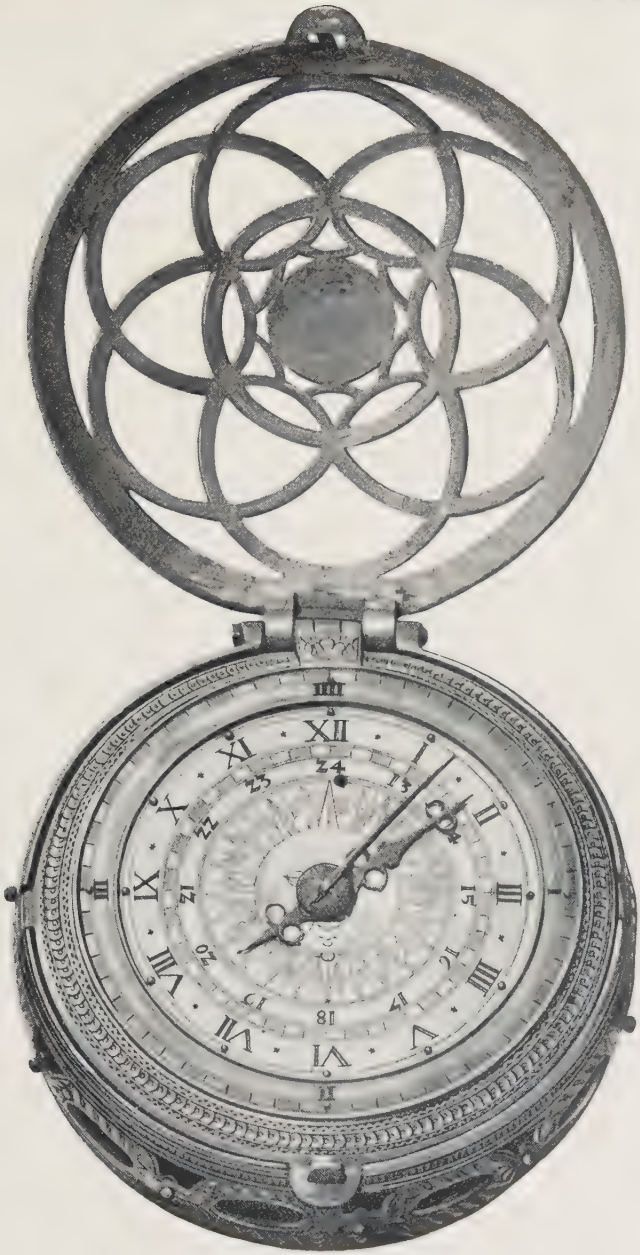


Fig. 1. Brass Table Clock of Sixteenth Century, bequeathed to the Museum by the late Hugh J. Rollo, W.S.

Fig. 2. Back of Brass Table Clock of Sixteenth Century, bequeathed by the late Hugh J. Rollo, W.S.

knobs immediately above them. This would enable a person in the dark to tell the hour by feeling the hands and comparing them with the knobs, and it would also be suitable for use by a blind person. Inside the outer circle of Roman numerals is a circle of Arabic figures beginning with 13 under one o'clock and running up to 24. The inner part of the circle is ornamented with a sun in splendour. Both hour- and minute-hands are made of steel.

The movement is a complicated one, striking the hours and quarters on two bells. The larger of these bells, which lies neatly inside the case, is struck by the hour hammer, and the smaller or quarter bell lies in the inside bottom of the larger one. This last is in the shape of a shallow saucer, as it must of necessity occupy little space. The larger bell is also pierced for the emission of the sound of the smaller one which lies inside it. The movement, which is jointed to the case, when shut down occupies the space inside the larger bell.

From this brief description an idea may be formed of the arrangement of the movement, and bells inside the case, where the space is economically utilised. The plates of the movement are of gilt brass, and the wheels of the quarter and striking train of steel. It is evident that at one time one of the wheels in the quarter train has been injured and has been replaced by a brass one. The wheels of the going train are all brass. The escapement is that known as the verge, which, although varying in detail, is the earliest form of escapement with which we are acquainted. It is also fitted with a brass balance and an ordinary steel balance spring.

In this clock there is no fusee to control the force of the spring, although this was invented as early as 1525, but in its place there is applied to the going train an earlier contrivance known as the stackfreed (fig. 3). This was meant to regulate and equalise the motive force, as a spring fully wound up is very much stronger than when nearly run down. It is not of the usual shape met with, and may be regarded as an improved form. It consists of a strong curved spring, with a roller at its extreme end, resting on a snail which revolves as the

piece runs down. When the clock is run down, the roller rests lightly on the smallest diameter of the snail, and does not retard the pull of the mainspring; but when the spring is being wound up, the snail also turns in the winding. It thus presents a larger diameter to the roller of the stackfreed, which presses harder on the increasing diameter, and when fully wound it rests on the full diameter of the snail with the greatest pressure, so that its pressure and retarding influence are in proportion to the pull of the mainspring. This piece of mechanism was only applied

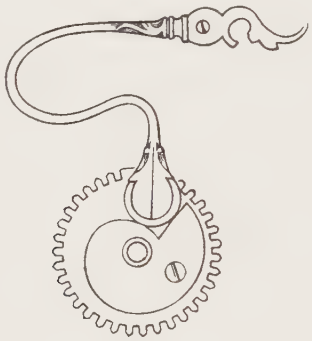

Fig. 3. The Stackfreed.

to very early timekeepers, and as it did not solve the problem of irregular time-keeping, it was quickly discarded.

There were rarely any winding holes in the cases of sixteenth-century clocks, and there are none in this one. To attach the key to the winding squares the case has to be opened and the movement turned out. There is attached to the clock by a ribbon a key, which, although undoubtedly antique, does not appear to be the original one.

There is happily no doubt as to where, nor by whom, and approximately when this interesting old timekeeper was made. On early clocks and watches the maker's name is rarely found; but occasionally the town mark or the workman's mark is stamped on one of the plates, and

on this clock there is found, struck on the upper plate of the movement, the device of a crossed shovel and spade between the initials "H. G." (fig. 4). Through an inquiry in the *Horological Journal* it has been ascertained that this mark was used by the old Nuremberg watchmaker Hans Gruber, who became a master of the Locksmiths' Guild in 1552, and, as is recorded in an old obituary book of the royal district archives of Nuremberg, died in January 1597, so that between these two years this clock was made. The device is interesting, as it is a play on the name of the maker. A "grüber" is a digger, so the spade and shovel are peculiarly appropriate. In the Germanische National Museum at Nuremberg there is a saddle watch with the same mark.

Fig. 4. Maker's Mark.

The fixing of the date and the present condition of the clock raise many interesting points as to the amount of alteration and renovation the movement has undergone when later improvements and discoveries in the mechanism of clocks were made. At the period of its manufacture screws were just coming into use, Germany being the country of their origin, and most of the screws in this timekeeper show themselves to be hand-made, although one or two have been replaced by more modern ones. It is also evident that the escapement is not the original one, as the balance spring was not invented till 1658, and it is most likely that, with the exception of the main wheel, a new going train of brass wheels with a balance and balance spring were supplied at a much later date. This is evident from an examination of the wheels. The new ones are clearly machine-cut and well finished, and were likely supplied subsequently to 1660, while the older steel wheels are as clearly cut by hand with a file. A regulator, consisting of a pinion and segment of a circle carrying the regulating pins, has also been supplied. The addition of a minute-hand to clocks is first recorded as having taken place in 1665, and in this instance the alteration has been so carefully done as not to leave any trace.

The pierced metal dome in place of a glass is also noteworthy, and

corroborates the date ascribed to the clock, for glasses were not used for table clocks until a later period.

It may not be amiss to note how closely this clock is linked to the original of this class of timekeeper. It was not, of course, until the mainspring was introduced as the motive power instead of weights that it became possible to have a portable timepiece, and it is generally conceded that the manufacture of this was first accomplished by Peter Henlein, a clockmaker of Nuremberg, who died in 1542. The earliest date to which this clock can be ascribed is 1552, so that it appears that Henlein and Gruber were almost contemporary.

Table clocks or watches of the sixteenth century are exceedingly rare, and, outside of museums and collections, there are almost no specimens to be met with, so that the bequest of Mr Hugh J. Rollo of this clock to the Museum is of great value.

### Silver Table Clock or Clock-Watch.

The smaller table clock might be more correctly styled an alarum repeating clock-watch. It measures $3\frac{3}{4}$ inches in diameter, 2 inches in thickness, and weighs 1 lb. 12 ozs. avoirdupois. Its maker was Nicholas Bernard, who worked in Paris about 1700. A watch made by him is exhibited in the South Kensington Museum.

The case of this watch is of silver, elaborately pierced and engraved with French decoration of the period (fig. 5). The centre of the back is filled with scrolls of floral ornament with cupids introduced. In the rim, which is treated in similar style, are introduced two curious tilting scenes. In one two winged knights, mounted respectively on a goat and a dog, are tilting with sharpened lances; and in the other, two winged cupids, mounted on hobby-horses formed of poles with the heads respectively of a horse and a cow, are tilting with lances with windmill-shaped terminations at the points.

The watch has an enamelled dial with Roman chapters, the minutes being numbered on the top of the chapters from 5 to 60 in Arabic figures. In the centre of the dial is a movable circle also enamelled

Figs. 5 and 6. Alarum Repeating Watch bequeathed by the late Lady Jane Dundas.

with Arabic figures 1 to 12 for the alarum (fig. 6). Enamelled dials were not introduced till the middle of the seventeenth century, so that this may be regarded as a fairly early specimen. It has ornamental brass hands, decidedly French in pattern. The plates of the movement are gilt brass with ornamental pillars. It has the verge escapement with an ordinary steel balance and balance spring. The going train is fitted with a fusee. It has also the more modern steel winding chain to connect the fusee with the mainspring barrel instead of gut, which was used in older table clocks.

It strikes the hours on a large bell which lies like a lining inside the case. This method was adopted in order to get the largest size of bell possible into the least space. It has also an alarum which rings on the same bell.

In the back of the case there are pierced three holes which also go through the bell lying behind it to give access to the winding squares. In many clocks such as this, where no provision was made for excluding the dust entering through these holes, an outer case, frequently of silver and shagreen or tortoise-shell, was provided. But there does not seem ever to have been such a case for this clock. The length of the pendant and the height of the raised joint of the front bezil exclude the probability of this.

This watch in one respect is quite a contrast to that first described, as its movement does not seem to have been renovated or improved, but presents now the identical appearance it must have had originally.

It is in such good condition and preservation that, if it had a few slight repairs, it could again resume its old duty of measuring the flight of time.

There are attached by a ribbon to the bow of the watch a silver winding key and two silver seals. The key, which in winding or setting the hands is used as a crank (fig. 7), is an extremely fine specimen. It belongs to the same period as the watch.

On one seal is engraved "G. S.," reversed cypher surmounted by a

foreign ducal coronet (fig. 8), and on the other a coat of arms consisting of shield, helmet, mantling, and crest (fig. 9).

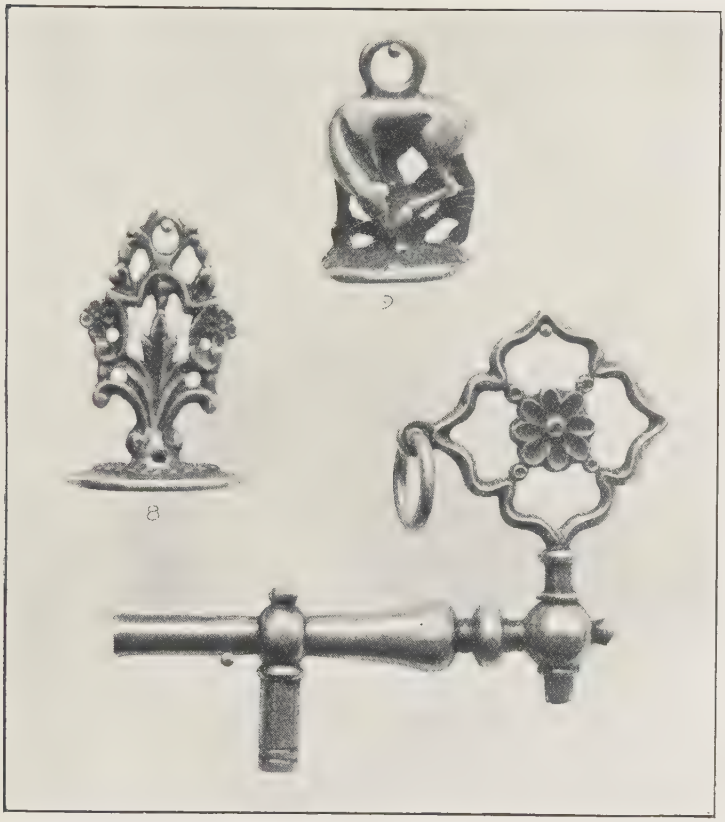

Fig. 7. Winding Key and Two Seals.

On the shield is engraved two lions passant, one above the other, a star of five points in the dexter chief; crest, a horse passant. The arms have not been identified.

There have been many speculations as to how these clocks were used. In the bequest the first was called a camp clock.

They are most frequently called table clocks, but there is not the least doubt that they were also used in much the same way as modern carriage clocks.

The provision of the bow points to their being intended to be hung

Fig. 8. Cypher on Seal.

Fig. 9. Coat of Arms on Seal.

upon a nail or attached to a strap, but the bows of neither of these show signs of their having been much used for this purpose; on the contrary, the back dome of the brass clock is very much worn, clearly indicating that it has usually been placed on its back.

That they were frequently carried about in coaches when travelling appears clearly from advertisements notifying their loss which may be seen in early London newspapers.

MONDAY, *9th April* 1906.

COL. A. B. M'HARDY, C.B., Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

GERALD HUGH SPALDING BEVERIDGE, 17 South Castle Street, Edinburgh.
EVELYN G. M. CARMICHAEL, Barrister-at-Law, Library Chambers, Temple, London.
WILLIAM HENRY KNOWLES, F.S.A., Gosforth, Newcastle-upon-Tyne.
EVAN N. BURTON MACKENZIE, Yr., of Kilcoy, Kilcoy Castle, Killearnan, Ross-shire.
Miss OCTAVIA G. PATERSON, Ashmore, Helensburgh.
ROBERT SANGSTER RAIT, Fellow of New College, Oxford.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By Dr HENDERSON, 17 Blacket Place.

Rude Stone Implement, chipped from a quartzite pebble, found at Wallajabad, Chingleput District, South India.

Stone Axe, of smoothed greenstone, from the Shevaroy Hills, South India.

(2) By JAMES LYLE, F.S.A. Scot.

Wooden Bismar, or Weighing Machine, from Shetland.

(3) By M. PAUL BORDEAUX, the Author.

Les Jetons et les Epreuves de Monnaies, frappés à Paris de 1553 à 1561 pour Marie Stuart.

(4) By E. CARTAILHAC and L'ABBE H. BREUIL, the Authors.

Les Peintures et Gravures Murales des Cavernes Pyrénéennes, Altamira de Santillane et Marsoulas.

(5) By the Trustees of the late Dr James Young of Kelly.

Bibliotheca Chemica: Catalogue of the Alchemical, Chemical, and Pharmaceutical Books in the Collection of the late Dr James Young of Kelly. Two vols. 4to. 1906.

(6) By John Christie, the Author.

The Antiquity of Aberfeldy: An Historical Sketch. Pp. 15.

(7) By Lieut.-Col. D. Prain, the Author.

A Sketch of the Life of Francis Hamilton (once Buchanan), Superintendent of the Botanic Gardens, Calcutta.

(8) By the India Office.

Archæological Survey of India. Vol. viii. The Muhammedan Architecture of Ahmedabad. Part 2. By Jas. Burgess, C.I.E., LL.D.

(9) By the Royal Society of Antiquaries, Copenhagen.

De Danske Runesmindesmaerker. Af L. A Wimmer. Tredie Bind.

(10) By the Surrey Archæological Society.

Waverley Abbey. By Harold Brakspear. 8vo. 1905.

(11) By W. H. Knowles, the Author.

The Premonstratensian Abbey of St Mary, Blanchland. 8vo. Pp. 14.
Aydon Castle, Northumberland. 4to. Pp. 18.

The following Communications were read:—

I.

## NOTICE OF THREE URNS OF THE DRINKING-CUP TYPE AND OTHER RELICS DISCOVERED IN A MOUND AT FORGLEN, BANFFSHIRE.

By J. GRAHAM CALLANDER, F.S.A. Scot.

Early in 1906 an artificial mound, on the estate of Forglen, belonging to Sir George W. Abercromby, Bart., was explored under the direction of Mr Douglas Abercromby, who kindly granted me permission to examine the site and record the discoveries.

The mound is situated in a plantation called Meadowheads Wood, within the policies of Forglen House, $\frac{3}{4}$ of a mile south of the mansion and 550 yards north-east of the Kirk of Forglen, in the parish of the same name in Banffshire. On the Ordnance Survey map the site is marked "Tumulus," and it stands above the 300-feet contour line, on the eastern slope of a hill running in a northerly direction parallel to the river Deveron, which is $\frac{1}{2}$ mile distant and 200 feet lower. Before the trees surrounding the site were planted, the mound would command an extensive view of the opposite side of the valley of the Deveron to the east. Rather more than a furlong to the S.S.E., in a field under cultivation, there is another mound surrounded by a trench, almost obliterated by the plough, and about $7\frac{1}{2}$ furlongs to the north-east there is a cairn. On the Ordnance map the former is marked "Rounie Law," and the latter, "Barbara's Hillock—Stone Coffin containing Human Remains found A.D. 1850."

The Forglen tumulus (fig. 1) is nearly circular in shape, it measures from about 64 to 68 feet in diameter, and rises in the centre to a height of 7 feet above the natural surface of the ground. It is almost entirely composed of yellow sand mixed with clay, no stones having been used in its construction except as adjuncts to two of the deposits in the cairn. It resembles the English earthen barrow more than the Scottish cairn, which as a rule is largely composed of stones. Mr Andrew Bell, the forester on the estate, who supervised the excavations and from whose

careful observations I am enabled to give many of the following details, informed me that the soil of which the mound was composed was not to be found in the immediate neighbourhood.

The first discovery made in excavating the mound was near its south-west edge, where, at a depth of 6 inches under the surface, a flat, rectangular, causeyed pavement A was exposed. It was 6 feet long by 3 feet broad, and its longer axis was north-west and south-east. This causeyed area was not level, but was laid at an angle following the slope of the mound. The 6-inch layer of mould that covered this space was dark in colour, apparently being composed of decayed vegetable matter like leaf-mould. At no other part of the surface of the mound was there anything like this thickness of vegetable mould. The stones used in the construction of the pavement were water-worn pebbles of quartz and quartzite varying from about 3 to 6 inches in diameter, and they were generally light grey in colour. Under the pavement there was nothing but the yellow sandy clay of the cairn.

The excavations were continued towards the centre of the mound, and 17 feet from the inner edge of the first pavement a second causeyed area was met with, 2 feet under the surface of the cairn, which at this spot was about 6 feet high. This pavement B differed from the first pavement in being laid level, and it was only 3 feet square. At a depth of 1 foot below it and 3 feet from the surface of the mound, a complete urn (No. 2) of the drinking-cup type (fig. 3) was found standing on its base but leaning slightly to one side. It rested on a deposit of black burnt material largely composed of charred wood, which surrounded it to a thickness of 1 foot. Between the top of the urn and the overhead pavement, and above the pavement, there was yellow sandy clay only. No bones were observed in the blackened soil under, or surrounding the urn.

From a point C near the middle of the inner edge of the second and smaller pavement, two straight but diverging rows of single pebbles extended forward, the first on the left CD in a north-easterly direction, the second on the right CE in a more easterly direction for a distance of

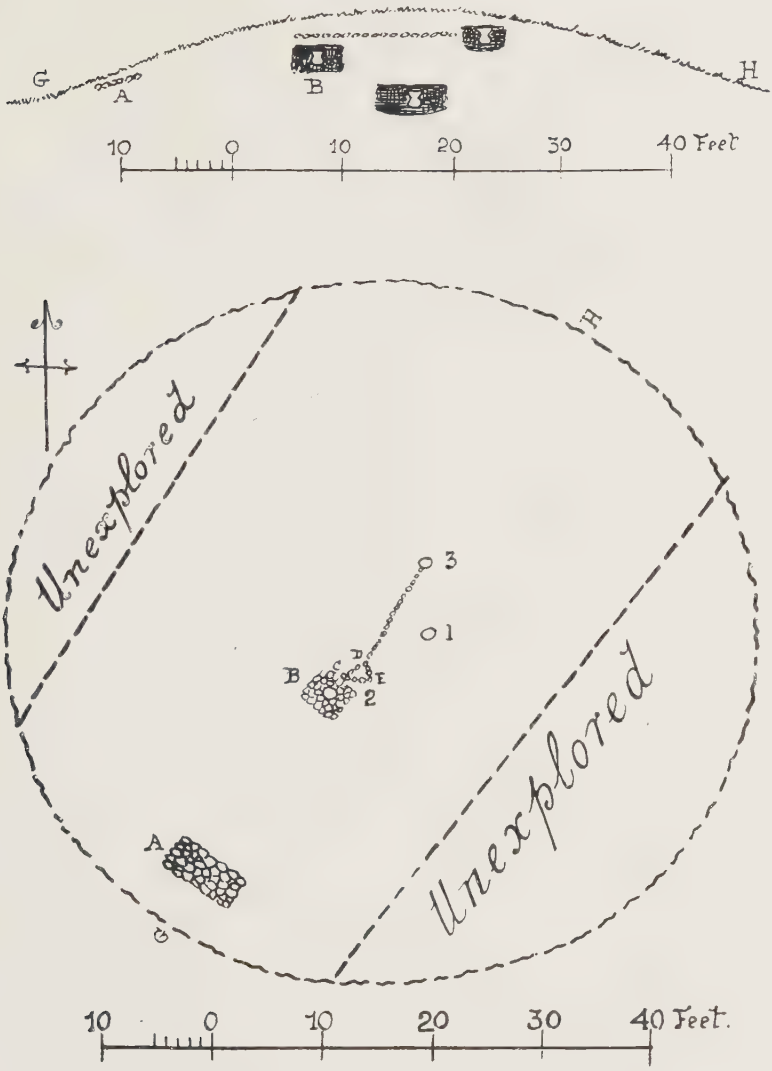


Fig. 1. Ground-Plan and Section of the Mound at Forglen.

2 feet, when it turned abruptly to the left, and after running 2 feet, joined the first row 2½ feet from the edge of the pavement, thus forming a triangle. From the junction of the rows D a single row of pebbles continued across the mound, in a slightly more northerly direction than the first row, for about 11 feet, terminating in a second black deposit almost in contact with the base of another urn (No. 3) of the drinking-cup type (fig. 4). The rows of pebbles were laid almost level, and the stones forming them and the second pavement were of the same shape, size, and material, as those used in the formation of the first-discovered paved area.

After discovering the second pavement, and the urn and rows of pebbles connected with it, instead of carrying the working face of the digging right to the bottom of the mound, the excavators followed up the rows of pebbles till they exposed the urn just mentioned (No. 3). It was in fragments, but from the position of the base it was evident that the vessel had been placed on its base. It was covered with 16 inches of sand. The fragments of the urn were entirely embedded in a black deposit of material similar in composition and extent to that accompanying the first-discovered urn (No. 2). No fragments of bone were observed.

The second urn having been unearthed, the portion of the mound between it and the first urn, which had not been explored pending the examination of the rows of pebbles, was excavated down to the natural surface of the ground. Slightly east of the centre of the mound a third but much larger black deposit was encountered, in the middle of which, and at a depth of 5 feet from the surface of the cairn, yet another urn (No. 1) of the drinking-cup type (fig. 2) was found. This urn, which was quite embedded in the black material, was lying crushed on its side, but as the base was lying horizontal, it was seen that it had been deposited erect on its base like the other two vessels. Underneath the urn in the black deposit were the remains of a skeleton, which had been placed in a shallow, saucer-shaped grave, 1 foot in depth and 5 feet in diameter, dug into the natural surface of the ground. Very few of the bones of

the skeleton were recovered, and what survived were in a very fragmentary condition. A small part of the jaw, containing two adjoining molar teeth in good condition, was the only well-preserved portion. A small barbed and stemmed arrow-head of light yellow flint, 1 inch in length and $\frac{5}{8}$ inch across the barbs, was found amongst the bones and blackened soil.

On the plan of the mound the distances between the urns were:

Fig. 2. Urn No. 1, from the Mound at Forglen.

from No. 1 to No. 2, 9 feet 6 inches; from No. 1 to No. 3, 5 feet 9 inches; and from No. 2 to No. 3, 14 feet 6 inches. No. 1 was about 4 feet east of the centre of the structure.

At various depths throughout the mound, from the natural surface of the ground on which it was erected to within about 12 inches of the top, thin layers of charred wood of no great extent were observed.

As already mentioned, the three urns are of the drinking-cup type. Urn No. 1 (fig. 2) is a very rare, if not unique, variety, it having a raised beading or moulding about $\frac{1}{8}$ inch in height encircling the

vessel about $\frac{1}{2}$ inch under the rim. It is reddish yellow in colour and is made of a fine paste, the wall being rather less than $\frac{1}{4}$ inch in thickness. It measures $6\frac{1}{2}$ inches in height, $5\frac{7}{16}$ inches in diameter across the mouth, $4\frac{5}{16}$ inches at the neck, $5\frac{1}{2}$ inches at the bulge, and $2\frac{7}{8}$ inches at the base. With the exception of a plain band $\frac{1}{2}$ inch wide which encircles the vessel $1\frac{1}{4}$ inches from the bottom, the wall of the urn is ornamented, from the base to within $\frac{1}{2}$ inch of the raised mould-

Fig. 3. Urn No. 2, from the Mound at Forglen.

ing, by the impress of a roughly twisted cord wound spirally round it eleven times between the base and the plain band, and twenty-four times between the plain band and the top of the ornament. Six to seven of the spiral lines occupy the space of an inch.

The other two urns are much alike and of a common shape. Urn No. 2 (fig. 3) is light yellow in colour and is coarser in texture than No. 1, the wall of the vessel being $\frac{5}{16}$ inch thick. The urn is $6\frac{7}{8}$ inches in height, 6 inches across the mouth, 5 inches across the neck, $5\frac{7}{16}$ across the bulge, and $3\frac{3}{4}$ inches across the base. It bears four zones of orna-

ment about $2\frac{3}{8}$ inches, 1 inch, $1\frac{1}{4}$ inches, and $\frac{3}{4}$ inch broad respectively, and $\frac{5}{8}$ to $\frac{3}{4}$ inch apart. The first occupies the everted part of the vessel from the edge of the rim to the neck; the second is just above the bulge; the third is midway between the second and the fourth, which is within $\frac{1}{4}$ inch of the base. The scheme of ornamentation is different in all the four zones. The upper zone is divided into nine narrow bands by nine parallel transverse lines; the first and sixth bands are occupied by vertical lines, seven or eight to the inch, the fourth and eighth bands by crossed oblique lines, and the remaining bands are left plain. The second zone is formed into five narrow bands by six parallel transverse lines; the second and fourth bands are filled in by crossed lines and the others are left devoid of design. The third zone, like the last one, is composed of five parts formed by six transverse lines; the first narrow band is occupied by short oblique lines slanting to the left, the third by perpendicular lines, and the fourth by crossed lines, and the other two are plain. The vertical and oblique lines are about $\frac{1}{6}$ to $\frac{1}{8}$ inch apart. The lower zone is composed of four parallel transverse lines having no ornament between them. All the transverse lines have been made with a toothed, comb-like stamp, and the others with blunt-pointed tools. Much less care has been bestowed on the ornamentation of this urn than on either of the other two; the crossed lines especially are very carelessly and roughly done.

Urn No. 3 (fig. 4) is taller than the others and its colour is a greyish yellow. The greater part of the inside of the vessel and the outside of the everted lip is much darker; this might have been occasioned by its being in contact with the black deposit in which it was found, but as neither of the other two urns, which were found in similar circumstances, have been discoloured, it is more probable that the dark colour is to be accounted for by different firing and composition of the clay of the vessel. The clay is coarser than in the other urns and the wall of the vessel is $\frac{5}{16}$ inch thick. The height of the urn varies from $7\frac{11}{16}$ inches on the one side to $7\frac{3}{8}$ on the other, the diameter of the mouth is $5\frac{3}{4}$ inches, of the neck $4\frac{7}{8}$ inches, of the bulge $5\frac{7}{16}$ inches, and of the base

$3\frac{1}{2}$ inches. Three zones of ornamentation closely resembling each other encircle the vessel; they measure $1\frac{5}{8}$ inches, 2 inches, and 2 inches in breadth respectively. The upper zone, which commences about $\frac{1}{4}$ inch from the rim, occupies the everted part; the middle zone, which encircles the bulge, is $\frac{7}{8}$ inch from the upper and $\frac{3}{4}$ inch from the lower zone; the latter extends to within $\frac{5}{16}$ inch of the base. The upper and lower

Fig. 4. Urn No. 3, from the Mound at Forglen.

edges of the first and second zones are each composed of three parallel transverse lines $\frac{1}{8}$ inch apart, with a zigzag line on the outside; the space between the inner transverse lines is occupied by perpendicular zigzags of four parts in the upper zone and of five parts in the second one, about $\frac{1}{6}$ to $\frac{1}{8}$ inch apart. The lowest zone is similar to the second, only the zigzag line is wanting on the lower side of it. The vertical zigzag lines in the upper and lower zones commence by slanting to the left, while in the middle zone they slant first to the right. The whole

of the ornamentation on this urn has been made with a toothed stamping tool.

From the preceding description of the mound and its contents the following deductions may be made. The last-discovered and central deposit was the primary interment. A shallow grave having been scooped out of the surface of the ground, the body was placed in it, and a large quantity of charred wood, or soil mixed with charred wood, was scattered over and around it. Judging by the two remaining teeth, the body was that of an adult. Above the body, and surrounded by the charred matter, a drinking-cup urn was placed erect. This urn having been found in fragments, it was impossible to ascertain if its contents differed from the matter amongst which it was placed. A mound of sandy clay was then heaped up over the deposit to the depth of several feet. Besides the urn, the only artificial object recovered from this interment was the arrow-head. It might be suggested that a single arrow had been deposited in the grave with the body, or that the deceased had been killed by an arrow, of which the flint head is the sole remaining evidence.[1] Before the mound was raised over the body, fires were kindled at various places on the surface of the ground, and the remaining traces of them cover small areas of 4 to 5 feet in diameter. I have seen the whole foundation area of a cairn covered with similar charred material. What may have been the object of these fires, or whether they were lit before, during, or after the burial ceremony, we cannot say, but as the body was interred amongst charred wood, they may have been lit for the purpose of preparing the charcoal. It has been suggested that the charred appearance of the wood may have been the result of eremacausis, but this is not so, because some pieces of decayed wood were found quite close to burnt wood, and there was no resemblance between them.

[1] B. C. A. Windle, *Remains of the Prehistoric Age in England*, p. 82, fig. 35, quoting from *L'Anthropologie*, says that in the Grotte de la Tourasse, in France, a skeleton was found with a flint arrow-head embedded up to the barbs in the front of one of the lumbar vertebræ, showing that the arrow had completely traversed the person's abdomen.

Subsequent to the first, another interment was made nearer the south-west side of the mound. Charred material was heaped over the body and an urn was placed amongst, but not covered with, the black deposit of charred wood. The tumulus was heaped up further till this second burial was covered with a foot of sand, then a causeyed pavement, 3 feet square, was laid right above it. From the inner edge of this pavement rows of pebbles were laid across the mound to where a third interment was made in circumstances similar to the last. The cairn was then further augmented by the addition of more sandy clay, till this deposit was covered with 16 inches and the pavement with 2 feet of soil. No osseous remains were seen in the deposits connected with the last two urns, but the probability is that both were associated with human interments like the primary burial. Although the two deposits were only about $2\frac{1}{2}$ feet in diameter, which may seem rather small a space in which to place a body unless that of a child, remains of skeletons, not cremated, accompanied by drinking-cup urns, have been found in cists of smaller area. The soil of the mound is free and open, and, as the two deposits were quite near the surface, it is not surprising that the bodies should decay and entirely disappear. Even of the primary interment, which was covered with 6 feet of soil, there was only a small handful of broken bones left. Also, the two urns were placed in the same relative positions to their accompanying deposits as the urn with the first burial. We are therefore, I think, justified in saying that there had been a body deposited with each urn.

It has not been demonstrated when the first-discovered and larger pavement was made, whether at the same time as the smaller one or after. No lines of stratification were observed in the mound, by which it might have been possible to say if the deposits were contemporary. The fact of there being only 6 inches of soil over the larger pavement and 2 feet over the smaller, does not point to different times for the construction of them, as soil heaped up in a mound is necessarily higher near the centre and thinner towards the edge, and the larger pavement was quite near the edge. However, as the stones used in the con-

struction of both pavements are of the same kind, it is very likely that they were both laid at the one time.

It was conclusively shown that the mound had been increased after each burial. The tumulus had not been raised to its greatest height immediately after the first interment and before the other two, and openings afterwards made in it to receive the latter deposits. Had this been so, the sides of such excavations would have been clearly marked by the black material of the deposits, but there was no discoloration of the yellow sandy clay which immediately covered them.

We are unable to say whether the three burials were contemporary or not, but if it be the case that the material of the mound was brought from some distance—and there is no difference between the soil at the foundation and at the top—it would seem not improbable that all three were nearly contemporary, or at least belonged to one generation, as the persons who completed the mound must have been in touch with those who began it. But, if the first interment were made some time previous to the other two, it is almost certain that they took place about the same time. There can be little doubt that the smaller pavement was laid in connection with the second interment, and as the rows of pebbles connected it with the third burial, we may consider them to have been made about the same time and by the same persons.

It has been remarked that the six inches of soil covering the larger pavement was black, like leaf-mould, while at the other parts of the cairn the yellow material came practically to the surface; but we are unable to say whether this pavement was laid on the surface, or whether it had been sunk into the surface and left exposed for some special purpose. If laid on the surface it would point to the mound having increased by some inches all over, by the accumulation of decayed vegetation. The operations of burrowing animals would account for the difference in colour of the soil above the pavement and on the other parts of the surface of the mound; at all parts except above the pavement the decayed vegetation would be mixed with the underlying yellow sand. If the pavement had originally been

sunk slightly and the stones left bare, falling leaves would have lodged in the hollow, and as they decayed would have filled it up gradually while they were blown away from the rest of the mound.

It is not known what was the purpose of the pavements or of the rows of pebbles, and the occurrence of them in the Forglen mound in connection with Bronze Age burials seems to be unique so far as Great Britain is concerned. The only example which bears a slight resemblance to it, so far as I can ascertain, is mentioned in Mr John Smith's *Prehistoric Man in Ayrshire*, p. 29, fig. 35, where he says that, according to the *New Statistical Account of Ayrshire*, under a sand mound at Dubbs, in the parish of Stevenston, in 1832, a causeway, 18 feet in length and 2 feet in breadth, was discovered; at one end of the causeway was a large stone about a ton in weight, and at the other end a stone coffin, 3 feet long and 2 feet broad, which contained two urns and five jet buttons.

The Society is indebted to Mr Abercromby for kindly allowing the urns and other relics to be exhibited.

## II.

### NOTICES OF STANDING STONES, CISTS, AND HITHERTO UNRECORDED CUP- AND RING-MARKS IN VARIOUS LOCALITIES.

By F. R. COLES, Assistant-Keeper of the Museum.

*No.* 1. *Standing Stones at North Glassmount, Kinghorn.* — This site, which was visited in June 1903 in company with Mr W. C. Dymond, is nearly a quarter of a mile south-west from the residence of the Rev. W. Jardine Dobie, at North Glassmount. The

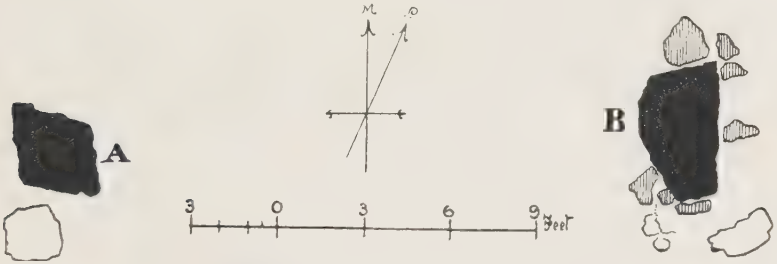


Fig. 1. Standing Stones, North Glassmount; ground-plan.

Stones stand on the flattish summit of a gently rising old pasture; and the ground immediately surrounding their bases is slightly suggestive of an artificially-made higher level. This difference in level, however, is so faintly discernible that no demarcation of the nature of a circumference can be observed, and at a few yards' distance from the Stones the summit (if artificial) merges imperceptibly into the natural incline of the ground. The height above sea-level is over 500 feet.

A space 19 feet 2 inches in width separates the two Stones, this measurement being taken at about the middle of each Stone vertically, and from the north angle of Stone A to a point on the inner face of B exactly east by compass, from the point on A. Both Stones are vertical, this uprightness having been ensured by a packing of small stones, several of which are still *in situ* at the base of the East Stone.

Several others lie in proximity to the Stones, evidently loosened out of their original positions by the feet of cattle.

The West Stone (A on ground-plan, fig. 1) is a well-set-up, rather smooth-sided block of a very quartziferous rock; indeed the greater portion of it seems to be white quartz. It rests upon a rhomboidal base which girths 10 feet 8 inches. The outer side is almost truly vertical, and a line extended parallel with this side points 23° west of polar north. Its height above the general level of the ground in the area is 6 feet 2 inches; and its greatest girth (see the view, fig. 2) is 12 feet

Fig. 2. Standing Stones, North Glassmount.

8 inches. Close beside it, to the south, lies a heavy block of the same quartzitic stone, about 2 feet 6 inches square and 1 foot 4 inches above ground.

The East Stone has also its smoothest and most vertical side facing the outside. Its basal girth is 12 feet 8 inches, and at 21 inches up, where it seems broader, the girth is only wider by 1 inch. In height this Stone is 5 feet 7 inches. We had considerable doubt as to its mineralogical character, its rough and reddish exterior at first suggesting a sandstone; but on afterwards seeing blocks *in situ* near the Stonyhall Hill exactly resembling it, but indubitably much-weathered whinstone, I am convinced this Standing Stone is of the same material. Several sharply defined small circular hollows can be observed on all its

surfaces: but these we at once attributed to the working out of small nodules of quartz by weathering.

As regards the relative positions of the Stones, and the possibility of their being the remnants of a Circle, one would expect that the broader and straighter side of the East Stone would be placed facing towards the centre, which arrangement would have been more in keeping with that which usually obtains in, at any rate, the greater Stone Circles.

Next, the Stones seem individually too tall and massive to have been members of a Circle whose diameter was less than 20 feet. Lastly, we could hear of no tradition of a Circle here.

Suggestions towards an excavation were made to Mr Dobie; but, so far as I know, none has yet been made.

The occurrence of Standing Stones in couples is probably somewhat rare in Scotland, and evidence is yet lacking to explain their purpose. In Thrumster, Caithness, Dr Joseph Anderson many years ago examined the ground between and around the bases of two great monoliths; but there were no relics disclosed. The same negative result was obtained at the Giant's Grave, at Lochend, Ollaberry, explored by Dr Robert Munro and Mr R. C. Haldane, the proprietor. Further investigation is therefore much needed in the case of this fresh megalithic problem.

*No. 2. Standing Stones of Orwell.*—These two Stones had for a considerable time interested me, by name, and through my having become the possessor of a fine photograph of the group, before I was enabled, through the courteous invitation of Dr Mungle of Kinross, to visit the site in August 1904. Many interesting sites were visited during a long day's driving, on that occasion, to some of which I shall refer later, but to me the most important was the site whereon stand these two fine monoliths. Close to the road running past Orwell farm on the north, they must for many years have attracted popular notice. They stand on a very gently rising ground, the space between them and for some distance to the south being somewhat higher than the surrounding field. In ground-plan they are related as shown in Fig. 3. The East

Stone is the higher, standing 9 feet 8 inches clear of the ground, smooth-sided and hexagonal. At the base its girth is 9 feet 9 inches, swelling up at the 5-foot level into 10 feet 8 inches. The West Stone, very rugged and angular, is 7 feet 5 inches in height, girths at the base 11 feet 1 inch, and at about 3 feet upwards, 10 feet 5 inches, its broadest side facing the East Stone. Both are of whinstone. The shortest distance between the two Stones is in a line nearly north-west, and measures 46 feet 10 inches.

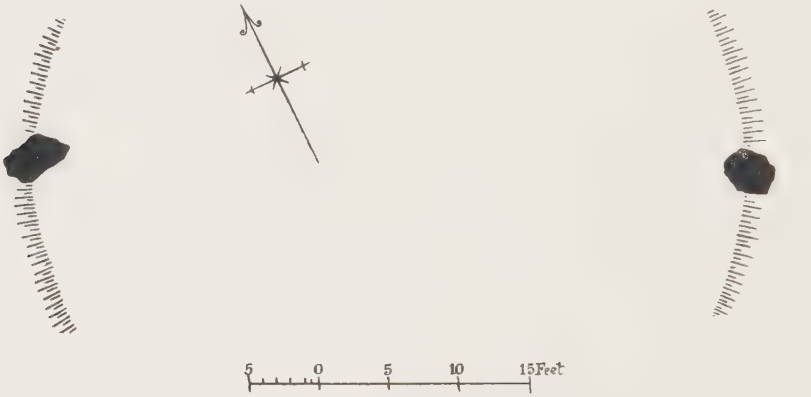


Fig. 3. Standing Stones of Orwell, Kinross-shire; ground-plan.

Mr R. Kilgour, one of the oldest residents of Kinross, showed me a fine partially flattened oval pebble of dark reddish quartzite, measuring 5 inches by $2\frac{7}{8}$ inches, which he found in the ground between these two Stones. The abrasion at each end clearly shows that this pebble has been used as a pounder.

In a book [1] which to some extent deals with local antiquities, occurs the following passage with reference to these two Standing Stones :—

"In the same field stone coffins have occasionally been turned up by the plough; and, about the beginning of the nineteenth century, the

[1] *Glenfarg*, by J. W. Jack, M.A.

ground was in many places dug up by the neighbouring proprietor, when quantities of bones much decomposed and mixed with charcoal were discovered."

The view (fig. 4) shows the Stones as seen from the south-west.

*No.* 3. *Easter Urquhart, Kinross-shire.*—In Strathmiglo there are even yet fairly abundant remains of prehistoric times. Cairns, unmistakably burial cairns, and mounds of varying dimensions and condition are still to be seen at several places; and through the kind hospitality of Dr Mungle of Kinross I am able to record some of these.

Fig. 4. Standing Stones of Orwell.

At Easter Urquhart, some yards north of the road, is a conspicuous but nameless mound, overshadowed by a roundel of tall trees growing around its base. It measures about 52 feet in diameter and is 8 feet in height. On its southern slope are two great Stones, both prostrate. The smaller, to the west, is a thick, flat block, 3 feet in diameter, and it is stated to have been moved from the top of the mound, where it covered some human bones. It bears a close resemblance to the cover of a cist.

Close beside it, on the east, lies a long whinstone block, 7 feet 5 inches in length, 15 inches thick, and 14 broad. It formerly stood outside of the mound towards the south. Portions of the mound have been burrowed into by rabbits, and the stony interior is thus exposed.

*No.* 4. *Easter Nether Urquhart Standing Stone.*—The farm-steadings

here are distant from the mound just noticed half a mile, and in the second field to the east there stands a not very shapely block of whinstone, measuring in height 5 feet 5 inches, in greatest girth 9 feet 5 inches, and round the base 8 feet 9 inches.

The Stone stands with its shorter side set due north and south. No tradition exists of a group of Standing Stones here; but on the 6-inch sheet of the O.M., quite near this Stone, the site of a cairn is marked, to the north.

*No.* 5. *Small Stone Circle in Arran.*—This site was examined in May 1901, when I visited Brodick, at the request of the Council, to make drawings of the remarkable series of cup- and ring-marked rocks on Stronach Ridge, Brodick Bay.

A brief notice of the Circle or group of Stones will be found in the *Proceedings.*[1] The site is close to the road between Lamlash and Brodick, 2 miles south of the latter, and on the east of the road, partly concealed among the heather, and just on the crest of the moor. There are at present four Stones here (see the ground-plan, fig. 5).

Two of them are conspicuously larger than the others, and, if equal interspacing be admitted, the Circle when complete must probably have contained seven Stones. Two small and loose pieces of stone lie within their circumference. Stone A stands 4 feet in height; B, 2 feet 4 inches; C, 3 feet; and D, 3 feet 6 inches. They are all rough granite boulders such as the moor is full of in this vicinity.[2] The diameter of the Circle is 21 feet 3 inches.

[1] Vol. iv. pp. 505, 513.

[2] It may be mentioned that the friends who assisted me in measuring this Circle were as keen as possible on the theories started by Mr F. L. Lewis as to the relationship between the Circle sites and any prominent hills. The opportunity of testing this was too good to lose; and I therefore noted that, at a point south by compass, 64 feet distant from the centre of stone D, there stood a huge rough block of quartzitic conglomerate. If this same line were continued (also by compass) northwards, we found it struck the summit of Goat Fell. Again, a line bisecting the centres of stones D and C strikes direct to Ben Nuish, a very fine peak about 6 miles distant. But surely the fact that these measurements and observations were *by compass* and not by the true north, ought to invalidate them from any sort of confirmation of the theories suggested.

In my observations of this site I am corroborated by those made long ago by Dr James Bryce.[1] During the course of his valuable and interesting excavations conducted among the larger Stone Circles of the

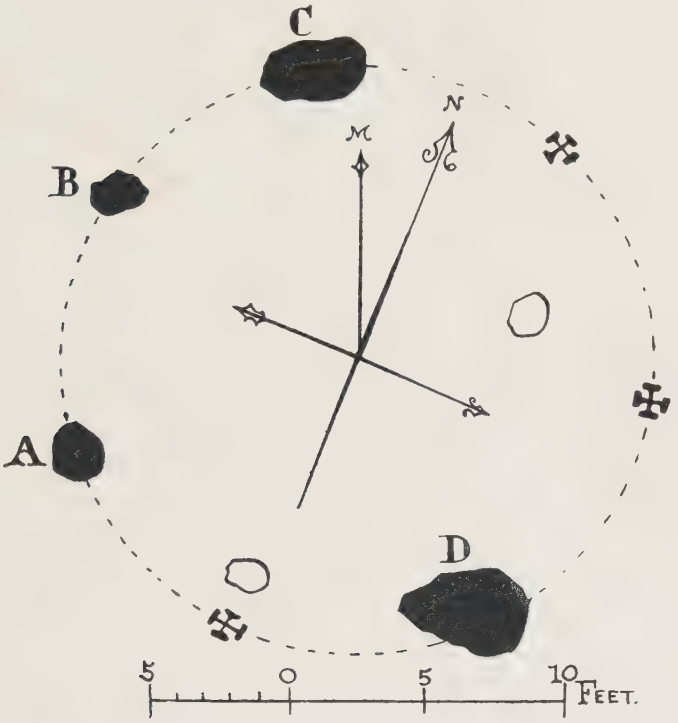


Fig. 5. Stone Circle near Lamlash, Arran ; ground-plan.

west side of Arran, Dr Bryce also examined this small and inconspicuous Circle on the extreme east of the island ; and the following is his account of discoveries made in it :—

"Excavating at the centre, we found a small cist at less than a foot in depth, and lying about north-east. It was covered by a small lid, and

[1] *Proceedings*, vol. iv. pp. 505, 513.

the dimensions were 2 feet 2 inches in length, $10\frac{1}{2}$ inches in depth, and 11 inches in width. Inside, there were several bone fragments and black earth. A flint implement was found in the stony soil above, and three other flint fragments; but nothing of this kind in the cist itself. This was of a much ruder structure than any we had before seen. It

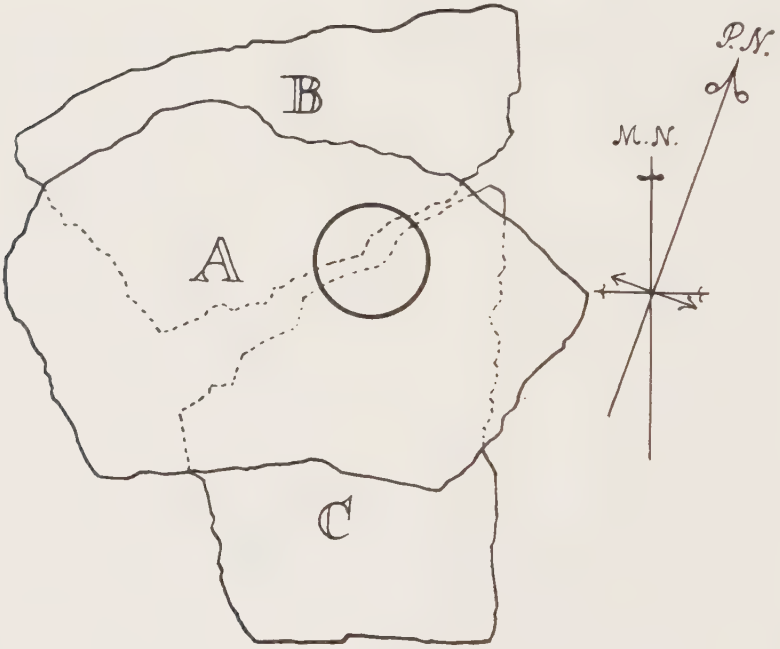


Fig. 6. The Auld Wives' Lifts; ground-plan.

was cut out of the solid sandstone rock, but with little care or exactness; the sides, however, were nearly perpendicular. No other cist was found, nor remains of any kind, though a trial was made at several points round the centre. A deep opening was also made at both sides of the upright Stone (*i.e.* the block standing 64 feet to the south), but nothing was met with worthy of being recorded."

This Circle probably had originally seven Stones, the other three being at the points indicated by crosses on the plan.

*No.* 6. *The Auld Wives' Lifts.*—Much has been written[1] in support of various theories concerning this remarkable group of naturally poised and enormous blocks of sandstone. They occupy the centre of a large, rudely circular, natural hollow near the middle of the wide and rocky Craigmaddie Muir, and in ground-plan they lie as shown in fig. 6.

Fig. 7. The Auld Wives' Lifts ; from the west.

The top Stone, A, measures 22 feet by 11 ; the north Stone, B, 20 feet by 8 ; and the south block, C, 14 feet by 10. The top Stone projects greatly over the western edges of the two blocks beneath it (shown by dotted lines in the plan). In appearance the group (see fig. 7) is really impressive, and one scarcely wonders at the strange legends that have arisen around this huge agglomeration of megaliths. There is a fairly

[1] See *Trans. Glasgow Arch. Soc.*, vol. i. (1857–1867), pp. 4, 234, 227 ; and *The Scenery of Scotland* (Geikie), ed. 1887, p. 375.

clear, though narrow, passage between the two lower Stones. The greatest vertical height is at the extreme W.S.W. point of the top Stone, which is 12 feet 10 inches above the ground. Near its east end on its south side the height is 11 feet 5 inches. The greater part of its upper surface is nearly flat, with a very slight incline towards the south-east. In thickness this Stone varies between 7 feet 6 inches to 5 feet 8 inches.

Thus far these great masses of grit present features attributable entirely to natural causes; but on the nearly flat top of the highest Stone there occurs the one special feature which brings the group within the scope of an archæological notice. This is an incised ring (see fig. 6). It appears to have been first noticed by Mr A. D. Robertson,[1] who thus describes it in 1867: "A Circle of 36 inches in diameter, the circumference of which is an incised line measuring about 5 feet from the east end, 2 from the north side, 10 from the west end, and 5 from the south side of the platform." Mr Robertson claims these Stones as "a Druidical altar," and goes on to state that, in spite of many disfiguring modern initials being roughly cut here, "the ancient sanctifying emblem, which has been carefully engraved, is yet clearly traceable, and bears every appearance of having been executed at some very remote period."

Since the date of Mr Robertson's notice, several observers have examined and seen the incised ring; and, though we may nowadays smile at the notion of such masses of stone having any connection with Druidical rites, I am able to confirm the accuracy of his measurements, and put on record here the true dimensions and position of this evidently ancient piece of incised work.[2]

[1] The writer of the article in the *Trans. Glas. Arch. Society* referred to, *supra*.

[2] The Auld Wives' Lifts belong, in the megalithic folk-lore, to the section which comprises legends of women, or witches, or carlines, who transport through the air masses of stone, great or small, and here and there drop them; thus forming cairns, groups of standing stones, or single groups of enormous blocks, like the *pierres levées* at Poictiers and other French localities. This remarkable group on Craigmaddie Muir has also associations with another phase of superstition; for Mr Robertson observes that it is "still necessary for all strangers visiting this enchanted place for

*No. 7. Dungoyach Stone Circle.*—On the Ordnance Map, 6-inch scale, Sheet XXVII., of Stirlingshire, at a point slightly over a quarter of a mile south-west of Duntreath Castle, and on the south bank of the Blane Water, there is shown a group of five Standing Stones. The site is about 250 feet above sea-level, and occupies the most level portion of a long plateau closed in on the north-west with most romantic abruptness by the lofty, rocky, tree-clad heights of Dungoyach, and, beyond the Blane Water, by the more distant, but still imposing, twin-fronts of Dungoyne. Still farther away, but near enough to emphasise the sense of seclusion, the beautiful green slopes of another range of hills

the first time, to creep through it, if they wish to avert the calamity of dying childless." He notes the old spelling was Craig-madden, and translates madden as =*moidhean*, entreaty, supplication : The rock of prayer. There is a very incorrect brief notice of these Stones in Wilson's *Prehist. Annals of Scot.*, vol. i. p. 93.

In *The Scenery of Scotland* (Geikie) occurs the following interesting passage :—

"Giant's Stone, Giant's Grave, Auld Wives' Lift, Witches' Stepping Stones, Warlocks' Burdens, Hell Stanes, and similar epithets are common all over the Lowland counties. . . . In wandering over the south of Scotland, I have met with some curious traditions and beliefs of this kind. The following was told me on the spot by an intelligent native of the village of Carnwath. Before farming operations were there carried to the extent to which they have now arrived, large boulders, now mostly removed, were scattered so abundantly over the mossy tract, between the river Clyde and the Yelping Craig, about 2 miles to the east, that one place was known familiarly as "Hell Stanes Gate" (road), and another as "Hell Stanes Loan."

The traditional story runs that the Stones were brought by supernatural agency from the Yelping Craigs. Michael Scott and the Devil, it appears, had entered into a compact with a band of witches to dam back the Clyde. It was one of the conditions of such agreements that the name of the Supreme Being should never on any account be mentioned. All went well for a while, some of the stronger spirits having brought their burden of boulders to within a few yards of the river, when one of the younger members of the company, staggering under the weight of a huge block of greenstone, exclaimed : "O Lord ! but I'm tired." Instantly every boulder tumbled to the ground, nor could witch, warlock, or Devil move a single stone one yard farther. And there the block lay for many a long century, until the rapacious farmers quarried them away for dykes and road metal.

Another explanation, of a somewhat different kind, was given by a stone-mason among the Garrick Hills, who, on being asked how he imagined that the hundreds of granite boulders in that district came to lie where they do, took a little time to reply, and at last gravely remarked that he "fancied when the Almighty flang the warld oot, He maun hae putten thae stanes upon her to keep her steady."

close in the prospect on the west. In the extreme distance in the north-east, the mountains on the borderland of Perth and Dumbartonshire may be seen.

On the map above referred to, the Stones are shown as a group of five, four of which stood in a line 54 feet long and N.N.E. and S.S.W. The fifth stood or lay about 40 feet to the north-west. At some period between the date of the survey and that of my visit in July 1903, con-

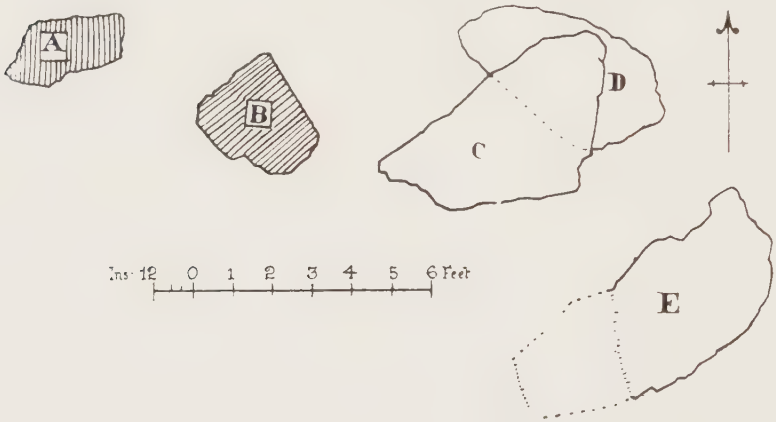


Fig. 8. Stone Circle at Dungoyach; ground-plan.

siderable disturbance must have taken place; for the five Stones now occupy the positions shown in the annexed ground-plan (fig. 8).

The Stone marked A is a rather rough mass of granulated quartzite. It has a very distinct lean towards the north. Measured vertically on that side, it now stands 2 feet 9 inches above ground; the length of its slope is 3 feet 5 inches, its top measures 2 feet 6 by 1 foot 2, and its basal girth is 8 feet 5 inches. The Stone B—the only one of the group now truly erect—is of a coarse, blue-grey whinstone veined with white quartz. Its widest side faces the north-east, and the whole surface of this side is smooth and vertical, and forms with its north-west face almost a right angle.

The height of this Stone is 5 feet 3 inches. It has a jagged and pointed top, and its basal girth is 9 feet 5½ inches. The next Stone, C, lies partly on the ground and partly on Stone D. Its greatest length

Fig. 9. Dungoyach Circle; from the north.

Fig. 10. Dungoyach; from the south.

is 7 feet 10 inches, breadth 3 feet 9, and its thickness at the north end 2 feet 3 inches, where, at the same point, it is 3 feet 4 inches above the ground. It is of the same kind of stone as B.

The fourth Stone, D, is a soft, reddish sandstone, roughly oval in

contour, and of a pretty uniform thickness of 1 foot 3 inches. It measures 5 feet 6 inches by about 3 feet, and is quite flat on the ground. Rabbits have burrowed below it.

The last Stone, E, is also prostrate; what remains visible of its surface measures nearly 6 feet by 3 feet 2 inches; but a portion about 2 feet 6 inches long runs into the ground. At the north-east angle it measures 1 foot 8 inches in thickness. It is of the same kind of stone as are B and C.

Two views, from north and from south, are appended (figs. 9, 10).

## II. Notices of the Discovery of Cists.

*No.* 1. *Balbridie, Durris, Kincardineshire.*—Information of this very interesting discovery was first made to me during the September of 1904 by Mr A. Macdonald of Crossroads Schoolhouse in Durris, and his account was a little later supplemented by notes and photographs taken by Mr James Smith of Pinewood, near Crathes. Two of the Urns also, presently to be described, I saw at Durris House, where they are preserved by the owner, H. R. Baird, Esq.

The account given by Mr Smith is as follows:—

"At Balbridie, on the estate of Durris, on Saturday afternoon of May 13, 1893, while some labourers were preparing the land for turnips, the tines of a grubber caught on a flat stone a few inches below the surface of the ground, and laid bare an ancient tomb or cist. It was built of four large flagstones, and covered completely with a fifth, and was nearly filled up with fine sand, which, on being removed, an Urn and a number of human bones were discovered, including part of a skull and internal ear, twelve loose teeth, half an upper and an almost complete lower jaw with fourteen teeth in a first-class state of preservation. There was also a humerus in good condition.

"The skull and head-bones, including jaw-bones, were found in the middle of the east end, the humerus about a third down the south side, and the Urn in the north-east corner.

"The Urn was composed of rough red clay, and had ten annular parallel marks round it, with angular and other markings between each pair. It was 6 inches high, $5\frac{1}{2}$ inches wide across the mouth, $3\frac{1}{2}$ inches across the bottom, 15 inches round the neck, and 17 inches round the widest part; it was broken on the edge, and was full of sand (fig. 12, Urn on the left). There was also a quantity of charred wood or other organic remains found amongst the sand.

"On making further search, two more cists were unearthed, one of

Fig. 11. Second Cist found at Balbridie, Durris.

them being made up of five, instead of four, flagstones (fig. 11), the west end having two forming an angle. The distance from the apex of the angle to the east end of the grave was 58 inches. The slabs at each side were 42 inches long, and the cist was 24 inches wide at the bottom, and 17 at the base of the angle. It was 24 inches deep, and contained fragments of two Urns, one at the apex of the angle and the other at the south-east corner. It also contained several small fragments of bones and a quantity of charred organic matter.

"The third cist was an oblong tomb $30\frac{1}{2}$ inches long, $21\frac{1}{2}$ inches wide, and 2 feet deep, and quite adjacent to the tomb with the angular end.

Being on the edge of a steep incline when I first saw it, the south-most Stone had fallen away. It contained one Urn, the one which is cracked (fig. 12, Urn on the right), and several small fragments of bones and charred organic matter."

To this lucid account it is not necessary to add anything, except to record that Mr Smith, on my calling to see him about the finds, presented all the broken pieces of one of the Urns found in the second cist to the Museum, and I brought them away on my return to Edinburgh.

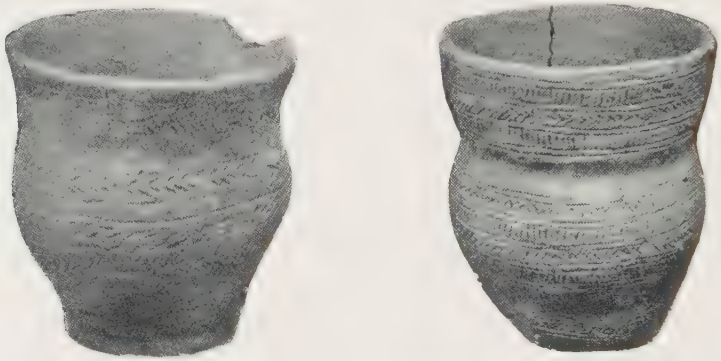

Fig. 12.

Urn from Cist No. 1, Balbridie. Urn from Cist No. 3, Balbridie.

All the Urns are of the Drinking-cup variety.

*No. 2. Cist at Burnside of Whitefield, near Aberchirder.*—The first information of this discovery was made to me in September 1905 by Rev. J. A. MacCulloch,[1] during our stay at Aberchirder, which we made the centre of our expeditions in surveying the Stone Circles of North Banffshire.

The discovery occurred during the ploughing of a field, which includes a well-defined portion of a rising ground, some 200 yards to the east of the farm, and in the last week of March 1905.

Some bones, presumably human, were reported to have been found,

[1] Author of *The Misty Isle of Skye.*

and to one of them, some substance, that looked like human hair, was apparently attached. In addition there was a small Urn. All such movable relics, I was told, had been sent up to Forglen House, and left in possession of the proprieter, Sir George W. Abercromby. After putting myself into communication with him, and arranging a day for seeing the relics, I went to the Burnside of Whitefield farm, and found that, thanks to the care exercised by Mr Simpson, the tenant, not only was there a passage cut for us through the yet standing corn, but the Cist and its cover were left just as they were the day after the discovery in March.

I then made careful measurements, and the annexed ground-plan (fig. 13) is the result. The only "liberty taken" is, that the cover stone, which actually lay beside the Cist, is shown in the drawing as if covering it.

This Whitefield Cist presents some notable features: first, it is remarkably small; its entire inside dimensions being only 2 feet 2 inches along the edge of the slab B, 1 foot 10 inches along the slab A, along C 1 foot 6 inches, and D 1 foot 3 inches—or, averaging the dimensions, the Cist measures 2 feet by 1 foot 4 inches. Against this we must put the depth, which at the base of slab B was 2 feet 2 inches.

The covering Stone (KK), as well as all the other slabs, are of the common blue whinstone. The covering Stone measures 3 feet 5 inches by 3 feet and half an inch, and is from 3 to 5 inches in thickness. Both its upper and under surfaces are roughish and irregular, and had no artificial markings. In addition to the somewhat irregular shape of the Cist, there is considerable want of precision in the setting of the side and end slabs. The largest, A, measures 3 feet 2 inches in length, 5 inches in breadth, and overtops the end Stone, C, by only about 2 inches. The North Stone, B, is only half the thickness of A, nearly as long, and overtops the end Stone, D, by $6\frac{1}{2}$ inches; this discrepancy having been adjusted by placing the two small oblong blocks E and F flat on the upper edge of D. When examining this arrangement, and removing the earth lying upon Stones E and F, the size and position of

the former recalled a somewhat similar arrangement noticed in the double Cist discovered at Succoth Place.[1] The ground therefore was carefully searched just beyond the outer edge of E, but without the discovery of any further structural features. This end-slab D measures

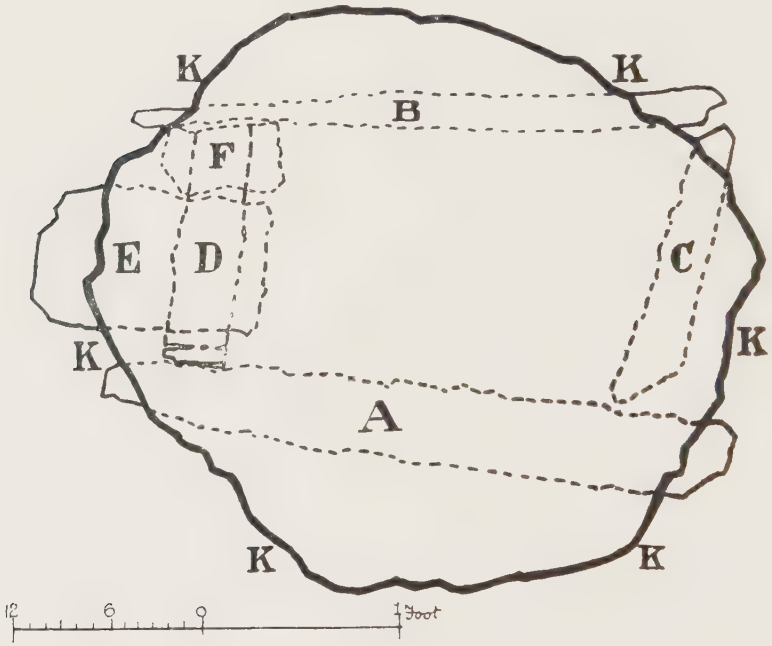


Fig. 13. Ground-plan of Cist at Burnside of Whitefield, Banffshire.

only 13 inches in vertical depth; it would seem thus to be a fair inference that the builders of the Cist, not having at hand any more slabs sufficiently large to fill the whole width and the whole depth at this end, placed the flat oblong blocks E and F and wedged up the angle (below D) with the best material that lay to their hands. The three

[1] *Proceedings*, vol. xxxvi. p. 670.

slabs A, B, and D are set vertically; but C had a very decided outward slope, something like an angle of 60°.

From the nature of the distinct, mound-like appearance of the ground above which this Cist was discovered, it is quite probable that further discoveries may be made here.

The Urn found (fig. 14), and now in the possession of Sir George Abercromby,[1] at Forglen, is of the Drinking-cup type, but of a variety which is distinctly rare in Scotland, as the subjoined measurements show:

Fig. 14. Urn found in Cist at Burnside of Whitefield.

height, $4\frac{5}{8}$ inches; extreme diameter of mouth, $5\frac{5}{8}$ inches; of the bulge, $3\frac{3}{4}$ inches; and of the base, $3\frac{1}{4}$ inches. This remarkable width across the rim, as compared with vertical height, occurs in only two other drinking cups in the Museum, viz., the examples from Kincardine Castle, Strathearn (EG 6 in the Catalogue), and from Tillyochie, Kinross-shire (EG 7).

The decoration consists of two broad zones of horizontal lines intermingled with chevrons, cross-hatching, and diamond-shaped figures, all done with a pointed implement in closely arranged dots, the upper zone

[1] The Urn was, through the courtesy of Captain Douglas Abercromby, sent to us on loan for proper examination and measurements.

being $1\frac{1}{4}$ inches broad and the lower $1\frac{9}{16}$ inches. In the other specimens quoted above, the decorative scheme, either in style or technique, does not resemble that of this Whitefield Urn. In the list furnished by Hon. John Abercromby, two Beakers are figured which seem to tally closely with this Urn. They are Nos. 152 and 160 in his illustrations,[1] and are both in Elgin Museum. One was found near Huntly, and the other at Acres in Knockando, Elginshire.

With the Urn in this unusually small Cist, human bones were found; but the only typical fragment preserved was a small unburnt portion of a skull, so much less in size and thickness as to lead to the inference that the interment here was that of a very youthful person.

*No.* 3. *Cist at Auchlin, New Aberdour.*—In *The Aberdeen Evening Express* of 29th March 1905 there is the following notice:—[2]

"Some months ago, while gravel was being removed from a rising ground on the farm of Auchlin, near New Aberdour, a flat stone set on its edge was removed, and an opening was discovered extending over 3 feet long, about $1\frac{1}{2}$ feet high, and of rather less width, and about $1\frac{1}{2}$ feet below the surface. The place lies north and south.

"The structure was very little damaged. It is built of stones. It is not so wide at the top as at the bottom, and the sides are a little contracted, so that a single stone covers the top, and it has proved a very sufficient roof. The floor of the place was quite smooth when first seen, just as if no mould had been disturbed above or beneath since the place had been made.

"There was no Urn. The contents were a small heap of bones near one corner. The skull was in different pieces. The joints of the neck were very distinct, also a rib or two. All of them were of a yellowish colour while other pieces of bones, including sections of the jaw, with some double teeth and many small bits of bone, were of a whitish colour, as if they had been subjected to fire. Some dark particles were also to be seen, apparently cinders of some kind. I can give no information of

[1] *Proceedings*, xxxviii.

[2] Supplied to *The Banffshire Journal* by Mr George Fowlie.

how long the field has been in cultivation, but the locality where the Cist was found is higher than the surrounding ground, and I expect there had been a much greater depth of soil above the place originally; and one would conjecture there had been a wide pit made for the building, as the gravel in the vicinity of the Cist is not so firm as at a little distance off.

"There have never been arrow-heads found near the place, but a stone axe was found on the field some years ago, also some other relics of the Stone Period found on the farm.

"The contents of the Cist have been removed, to be preserved in Aberdeen University Museum, and the place where they were found has been improved by Mr Keith, factor for Brucklay, and it is to be protected by fencing."

*No.* 4. *Cist at Blackhills, Fyvie.*—In *The People's Journal* of Saturday 1st July 1905, it is stated that: "A stone coffin, containing a human skeleton, was excavated at Blackhills, Fyvie, the other day. In a corner of the coffin was a jar in which there was some dark-coloured dust."

*No.* 4A. *Hill of Mountblairy, Alvah.*—The following notice is quoted from *The Aberdeen Free Press* of 21st June 1904:—

"While Mr M'Robert, Hill of Mountblairy, assisted by Mr John Findlater, was preparing the ground for turnips on Friday, the latter uncovered with the plough what he took to be a rabbit's nest. Inserting his hand, he was astonished to find it filled with bones instead of fur. Both now examined the spot more carefully, and Mr M'Robert at once decided that they had come on a cinerary urn. He proceeded to unearth it with the greatest care, but notwithstanding all their efforts, it was slightly broken. It is made of clay, and below has the form of a pot about a foot in diameter, tapering to a point at the top, the total height being about $1\frac{1}{2}$ feet. Nothing to show a bottom or even a slab to rest upon could be found. It was simply inserted in the earth, with the calcined bones lying within on the ground. Amongst these is one half of a bivalve shell, with nothing else in the way of jewellery or ornament. The find is being carefully kept by Mr M'Robert, who is

very obliging in exhibiting it. It was found on a slightly rising knoll almost on the boundary between Alvah and Forglen, on the estate of Mountblairy, and it is noteworthy that this is the second discovery by Mr M'Robert, the first being also on the estate of Mountblairy, though many years ago, and at a considerable distance from the present, namely, on the farm of Newton."

Quite recently I wrote to the finder asking for further details. Mr M'Robert, however, could only state that, owing to exposure, the Urn had completely fallen to pieces; that it was $\frac{3}{4}$ inch in thickness, and that the hollow of the neck measured about $2\frac{1}{2}$ inches in depth.

*No.* 5. *Sundayswells Hill, near Torphins.*—This site is on the Learney estate, the property of Col. F. Innes, and the bulk of the information here recorded is derived from letters sent to me by Mr James Ritchie, Corresponding Member of the Society of Antiquaries of Scotland, of Port Elphinstone School, who learnt the facts from Lieut.-Col. Francis Innes.

The hill, called by the strange-sounding name of Sundayswells, rises to the altitude of 820 feet; at a point about 700 feet high, and midway between Sundayswells farmhouse and Gownieburn, and almost half a mile nearly due west of the remains of a Stone Circle[1] there, there is a burial Cairn which had been long ago partially opened up. In its exposed central space were, however, several large blocks of stone set circularly, and presumably the portions of a species of chamber, and at this spot the Drinking-cup Urn, illustrated in fig. 15, was found.

On the side of the hill to the north-west of the Cairn, another Cist was found. In it were bones and "portions of a larger Urn which are also at Learney."

Mr Ritchie, in sending me notes of this Cairn, was inclined to group it with the low cairns found within Stone Circles. His photographs, and the dimensions he quotes of the central space of about 9 feet wide by 3 feet deep, certainly resemble the features disclosed in my account of the central cairn-surrounded hollow in the Circle at Whitehill, Monymusk.[2]

[1] *Proceedings*, vol. xxxiv. p. 171.

[2] *Proceedings*, vol. xxxv. p. 206.

The Drinking Cup measures $5\frac{3}{4}$ inches in height, $5\frac{2}{3}$ inches across the mouth, $5\frac{1}{3}$ inches at the bulge, and $3\frac{1}{3}$ inches at the base. It is made of a fine brown clay, and is about $\frac{1}{4}$ inch in thickness. The decoration is specially interesting, as it consists of one long spiral line made by pressure of a cord covering the whole exterior surface. This style of decoration has now been found upon three other of our Drinking Cups from the following localities:—(*a*) from Aberdeenshire (Rae Collection), (*b*) Tents Muir, near Leuchars, (*c*) Cuning Hill, Inverurie; and upon two food-vessels, those, namely, from Quirinish in Mull, and Cairn Curr,

Fig. 15. Urn found in a Cairn on Sundayswells Hill.

Alford. The continuous spiral also occurs in a varietal form on one of the Beakers described (*supra*, p. 283) by Mr J. G. Callander.

*No.* 6. *North Merchiston Cemetery.*—On Thursday, 25th August 1904, I was informed by Mr Alan Reid, F.S.A. Scot., that a Cist had been found in the cemetery at North Merchiston. I went out in the afternoon and learned the following particulars from Mr Moffat, which will be more intelligible by a reference to the annexed ground-plan of the site (fig. 16).

Early on the previous day, a grave was being prepared (No. 153 on the plan), and at about nine o'clock the workmen reported to Mr Moffat that they had had to remove some large slabs amongst which they found broken pottery. Mr Moffat, whose acquaintance with the sudden dis-

covery of cists was not slight, went at once to the spot, and, securing all the removable fragments of what he recognised as an urn, directed the men to remove also the various broken portions of the slabs to an out-house. He then communicated the discovery to Mr Alan Reid.

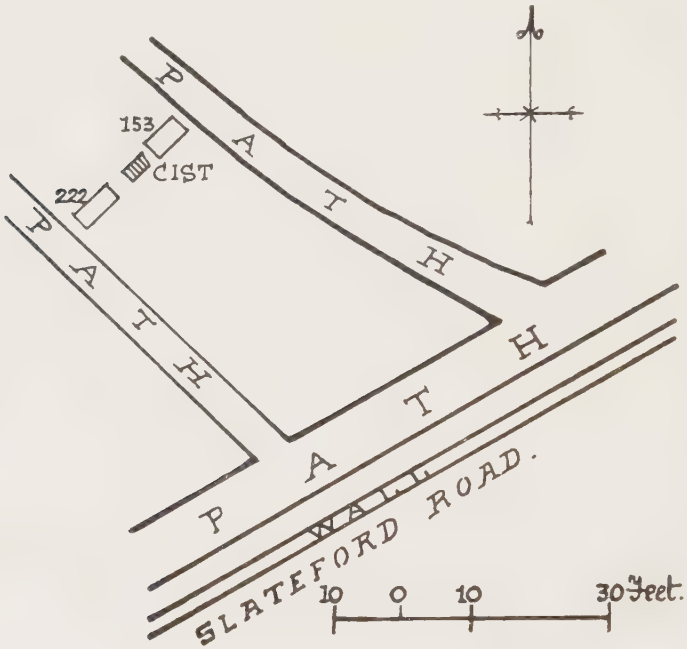


Fig. 16. Site of the Cist discovery in North Merchiston Cemetery.

The site (fig. 16) is almost the highest piece of ground now inclosed between the cemetery walls, and is at the altitude of 204 feet above sea-level. The Cist was discovered between the two graves Nos. 153 and 222, as recorded in the cemetery plan-book, and at the distance of 70 feet north-west of the wall bounding the Slateford Road. At the time of my visit, only the flooring slab was completely *in situ*. It was a large slab, very thin in proportion to its size, and was cracked across its

breadth. It measured 4 feet 6 inches by 2 feet 6 inches, and its longer axis lay north-east and south-west. Seven similarly thin slabs of clay-stone completed the Cist, which was 2 feet in depth, to the flooring slab; but the sides and ends were set to a depth of 6 inches below into the soil. The covering-slab, which I saw in fragments, was also of clay-stone,

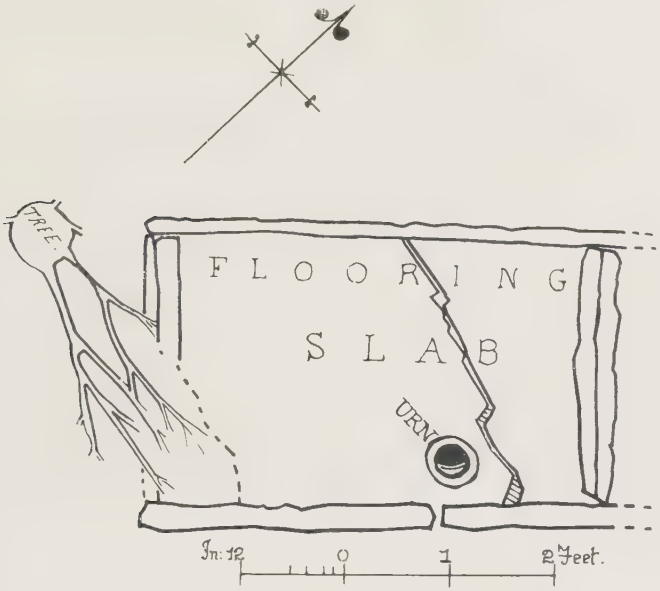


Fig. 17. Plan of the North Merchiston Cist.

only 1 inch in thickness; and its upper surface was within 4 inches of the grass. This part of the cemetery, however, had been levelled some time ago.

The seven slabs composing the Cist were arranged as shown in the plan (fig. 17), the ends of the Cist being strengthened by there being two slabs set close together. Notwithstanding this, the double-slabs at the south-west end were in part forced inwards and broken in pieces by the roots of the tree planted there. The complete length of the long

side slab on the north-west, and of one of the two forming the south-east side was not obtainable, on account of the newly made grave there.

The position of the Urn was pointed out to me by one of the workmen, and it is correctly recorded in the plan. It was covered by a thin piece of the same laminated clay-stone; but it was broken in the lifting. Otherwise, the Cist was described as being nearly filled with soil which had silted in.[1]

There are enough fragments of the Urn to show the following features:

Fig. 18. Cist at Cowdenhill.

that it was a food-vessel of rather coarse reddish clay, probably 6 inches in height when complete, $5\frac{1}{2}$ inches wide across the mouth, and 3 across the base. The lip, which, as usual, slopes down inwards, is $\frac{5}{8}$ of an inch thick, and bears three irregularly horizontal lines of closely touched pressed marks. Lines of the same character cover the space $2\frac{3}{8}$ inches deep between the lip and the shoulder, the lower part being quite plain. The inner side of the Urn is patched with dark-brown spots.

*No. 7. Cist and Urn at Cowdenhill, Grangepans, near Bo'ness,*

[1] These notes were made with the help of Mr Alan Reid, F.S.A. Scot., and Mr J. E. Simpkins, Second Attendant in the Museum.

*Linlithgowshire.*—This discovery was made on the 28th September 1905. In the course of correspondence with Mr H. M. Cadell of Grange, I received photographs of the Cist and Urn, and a few notes upon the discovery, which are to the following effect:—the site was a sand-bed of the 25-foot beach, about 10 feet above high-tide level; and, says Mr Cadell, "after careful examination, it is clear that the sea did not reach the coffin." The bones were mostly fragmentary, and there was nothing but the Urn, besides the soil that filled the interior. The Cist (fig. 18)

Fig. 19. Urn found in Cist at Cowdenhill.

was 40 inches long inside, about 21 inches wide, and 18 inches deep, covered by a heavy slab of freestone with no tool-marks on it. The sides and ends of the Cist were also of freestone slabs. The Cist lay with its long axis E. 30′ N.

Mr Cadell compares this Cist with its Urn to another containing a similar Urn found on the Grange estate in 1896, and in the keeping of Sir William Turner, at the Anatomical Museum.

The Urn (fig. 19) is of the food-vessel variety, standing 5 inches in height and measuring across the mouth $6\frac{3}{4}$ inches, and is richly ornamented in the usual style.

## III. Notices of Cup- and Ring-Marks.

*No.* 1. *Avochie, Rothiemay.*—The site of the cup- and ring-marked boulder here is on the north slope of the Hill of Avochie, at a point 586 yards S.W. of the site of a Stone Circle on Kimmonity, and slightly over a quarter of a mile N.N.E. of Midplough.

It was alluded to in my last account of the cup-marked Recumbent Stone in the Circle on Rothiemay home-farm.[1] This whinstone boulder measures 11 feet by 9 feet; at its nothern extremity it is 2 feet 5 inches above the ground, and at the southern 2 feet and $\frac{1}{2}$ an inch. The highest portion of the Stone is at a point near C on the plan (fig. 20), marked by an eight-rayed star; and from this point the surface, which is here and there broken by shallow fissures and groove-like marks entirely due to natural causes, slopes off at varying angles. This I have endeavoured to show in a conventional manner by placing arrows to indicate the slope: the shorter the arrow the steeper the slope. The portion above A is fairly flat and smooth; near D is a broadish flat edge also, and at some time or other the lowest part on the left seems to have been broken; whether it bore sculpturings or not, no one knows. The surface appears to have sustained a considerable amount of weathering, as Mr Geddes informs me most of the markings are not very distinct. The clearest are the ringed cups below D on the plan.

The total number of cups is eighty-three, of which five are distinctly oval in contour. They are arranged in four groups: A, in the north-west corner, containing twenty-seven simple circular cups and two oval cups, eight circular cups with rings, and one ringed oval; at B are two simple cups; at C, twenty-seven simple circular cups and two oval, also two circular ringed cups; at group D there are four simple circular cups and one oval cup, five very finely ringed circular cups, and one smallish oval with its ring. Nowhere on the Stone is there a sign of any straight groove

[1] *Proceedings*, vol. xxxvii. p. 228. For all the facts recorded in the present notice of this Stone I am much indebted to Mr J. Geddes, of the Schoolhouse, Rothiemay.

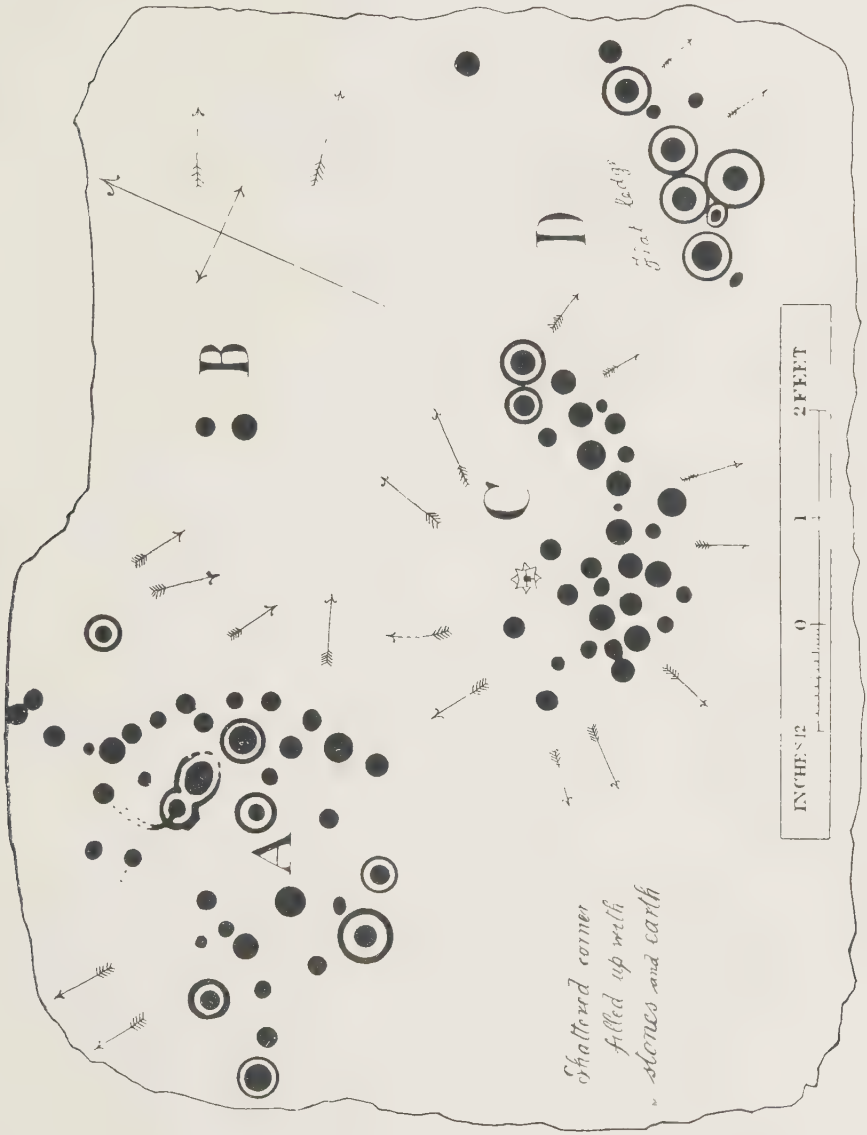


Fig. 20. Cup- and Ring-marked Boulder at Avochie, Rothiemay.

either connecting the cups or passing out of any of them. The cups vary in size from $1\frac{1}{4}$ inches in diameter to $3\frac{3}{4}$ inches. Fifteen of them measure 3 inches in diameter, thirteen measure $2\frac{1}{2}$ inches, and thirteen measure 2 inches; eleven of them are $2\frac{1}{4}$ inches wide, seven are $3\frac{1}{2}$ inches wide; and the two extreme diameters of $1\frac{1}{4}$ inches and $3\frac{3}{4}$ inches are represented each by only one cup. The largest of the rings measures $6\frac{1}{2}$ inches in diameter and the smallest 4 inches.

In group A the largest oval and its ring are connected with a small cup and its ring; and in group D the smallest ringed oval is appended to the largest ring on the Stone.

I believe I am right in stating that the discovery and first notice (in the district) of this interesting boulder is due to the observation of Mr Smith, formerly station-master at Rothiemay.

*No.* 2. *In Fordyce Kirkyard.*—The fact of there being a table-stone here, the upper surface of which is covered with cup-marks, was first brought to my notice by Dr W. Cramond of Cullen in 1903, who sent photographs of the Stone. As this is probably the first instance reported of a cup-marked tombstone in Scotland, we shall await with interest a description, with an illustration of these cup-marks, from the pen of Mr J. G. Callander, who has promised to examine the marks.

*No.* 3. *Hilton, Glass, Aberdeenshire.*—This group, as well as the next, was first noticed many years ago by Mr James M'William, farmer at Chapel Hill, in the parish of Glass. It was, however, only in 1903 that, in a letter describing the Stone Circle at Huntly,[1] Mr M'William referred to some cup- and ring-marked Stones located near his farm. Both the Stones had, in the meantime, been acquired by the proprietor, J. W. Grant, Esq., of Beldorney; and, on my writing to him for particulars, Mr Grant supplemented verbal information by presenting to the Museum a cast of the larger Stone. From this and a rubbing the annexed illustrations (figs. 22 and 23) were made. The larger one represents a portion of the flattish upper surface of a diorite boulder of which the cup-marked part measures 2 feet 1 inch by 1 foot 8 inches.

[1] *Proceedings*, vol. xxxvi. p. 568.

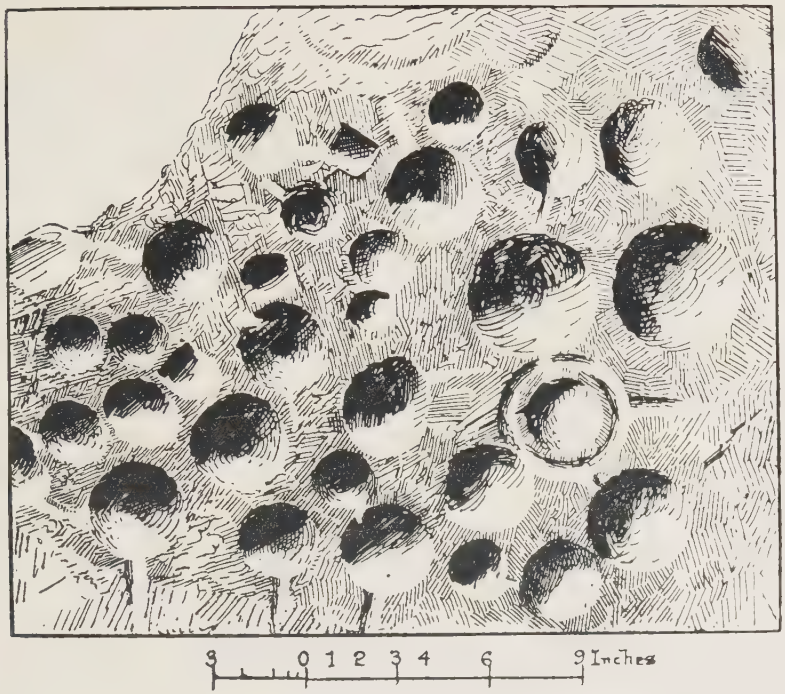


Fig. 21. Cup-marked Boulder at Hilton, Glass, Aberdeenshire.

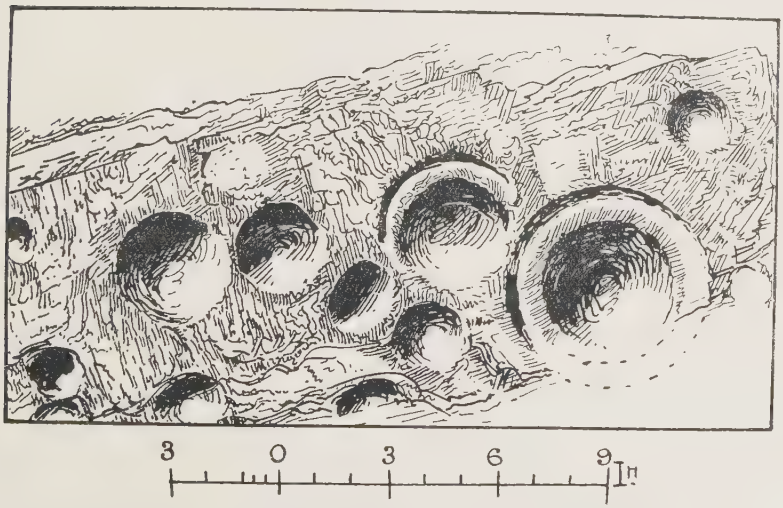


Fig. 22. Cups and Rings on Boulder at Hilton, Glass, Aberdeenshire.

It contains twenty-nine cups, one, near the centre, quite an oval; and, in addition, a small but very distinct oblong "cup." One of the middle-sized cups has a distinct ring and two grooves, and, in the majority of the others, short vague grooves are also traceable. The largest cups are $4\frac{1}{2}$ inches wide and 2 inches deep, the smallest $1\frac{1}{2}$ inches wide and only $\frac{1}{2}$ inch deep.

The other drawing shows a fragment only of a block of diorite, also from the neighbourhood of Hilton (fig. 25). Eleven cups can be traced on it, two of them being surrounded with rings. One cup is remarkably small and the largest is about $3\frac{1}{2}$ inches in diameter.

*No.* 4. *Bluebell Wood, Langside.*—The first notice of the Stone incised with the design shown below was due to Mr W. A. Donnelly, who contributed a description and a sketch to *The Glasgow Evening Times* of 25th June 1902. Later, Mr Ludovic Mann, at my request, sent me certain notes he had taken of the cup- and ring-marks. But prior to this, the Stone itself had, on the instigation of Mr Donnelly, I think, been removed from its site in the wood, and placed near one of the entrances to the new Kelvinside Museum. There I saw it and made measurements in July 1903.

The Bluebell Wood lies in a curving line to the west and south of Langside House, and the cup-marked Stone was at a point in the southern extremity of the wood, above and north of the river Cart.

It is interesting to be able also to record that the longer axis of the Stone lay almost precisely north and south, and the opposite axis east and west.[1]

The Stone is of a hard, whitish sandstone, a good deal weathered and rounded at the edges. It measures 4 feet 9 inches in length and 3 feet 2 inches in breadth, and varies in thickness from 2 feet 6 inches to 1 foot 7 inches. The striation of the Stone has helped to efface the cuttings, which, though perfectly clear and measurable, are shallow in proportion

[1] Though the fact that the Stone has for long been used as a seat must prevent us from laying much stress upon the position of the marks, there is no evidence to show that it was moved into its recent site.

to their width. And this feature I have endeavoured to portray in the accompanying illustration (fig. 24). Beginning at the north end of the Stone, there is one cup placed just where the outermost ring of that group touches the edge of the Stone. The ring has a groove leading towards but not into a central cup, and four other cups are placed on the two outermost rings, there being four rings in this group. The middle

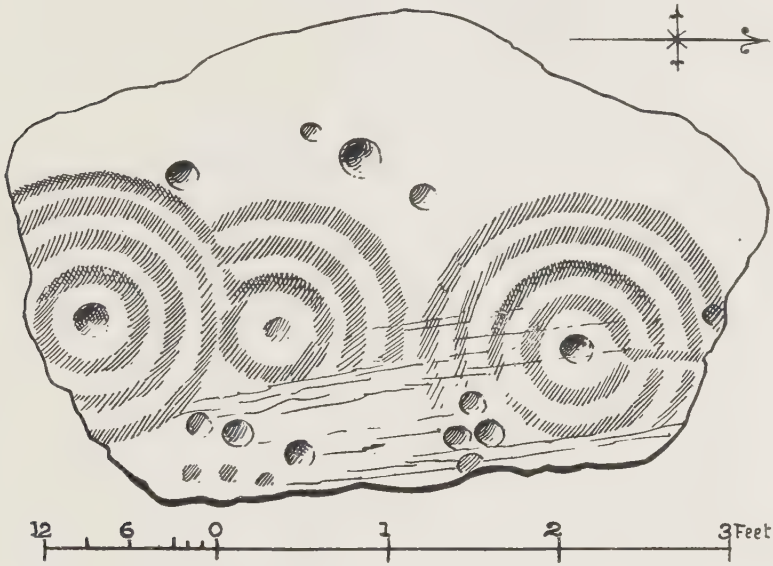


Fig. 23. Cup- and Ring-marked Stone found in Bluebell Wood, Langside.

group consists of a central cup and three rings, flanked on the west by a row of three cups (one of which is the largest of all), and on the east by a double row of six cups three of which are almost obliterated. This middle group is imperfectly concentric, two of its arcs running into the fourth ring of the group on the south, which has a fine deeply picked central cup. All the better-preserved rings are very nearly $1\frac{1}{2}$ inches in width of cutting.

The diameters of the outermost rings in each group are—of the north

group 1 foot 9 inches, of the middle group 1 foot 5 inches, and of the south group 1 foot 7 inches. The cups vary in diameter from 3 inches to $1\frac{1}{2}$.

Considering the extremely easily weathered nature of this Stone, and

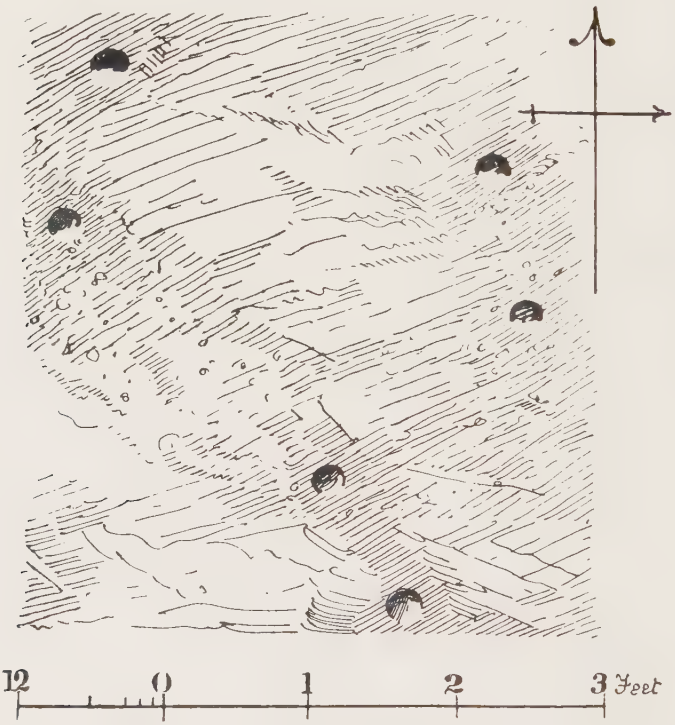


Fig. 24. Cup-marked Rock on Craigmaddie Muir.

the fact that its sculptured surface has already suffered much ill-usage, its present position, near the entrance of the Art Galleries, entirely unprotected by a railing and exposed to all sorts of abuse by casual passers-by as well as the weather, is not a fit and proper place for a Stone of such interest.

*No.* 5. *Craigmaddie Muir, Strathblane.*—On the day of my visit, in the company of Mr Callander and Mr Mann, to examine the great Stones called *The Auld Wives' Lifts*, we observed numerous flat surfaces of the sandstone cropping out among the heather. At a point some 300 yards nearly due south of *The Auld Wives' Lifts*, I found the group of six

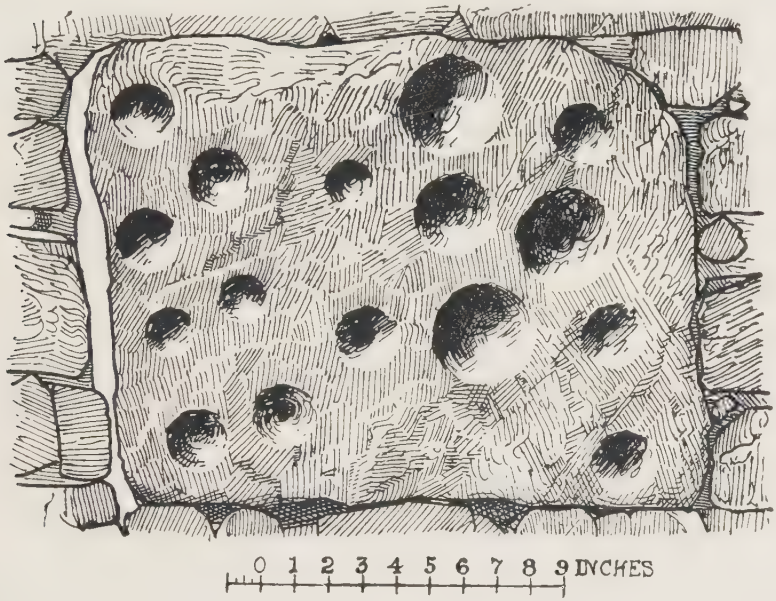


Fig. 25. Cup-marked Stone at Arngask, near Glenfarg.

small but distinct cup-marks shown in fig. 25. We carefully measured them, and the drawing shows a disposition of cups in pairs equidistant, forming a group which is, I think, quite unlike any other hitherto noticed.[1] The cups in each group are 13 inches apart, measured between their centres. Three of them, also, are 39 inches apart, measured in the same way. They are all $2\frac{1}{2}$ inches in diameter and not over $\frac{3}{4}$ inch in depth.

[1] See *Proceedings*, vol. xxxvi. p. 218, for a group somewhat similar.

*No.* 6. *Arngask, Glenfarg, Perthshire.*—The small Stone bearing the very clear and well-made cups shown in the next illustration (fig. 26) was brought to my notice by Dr Mungle of Kinross during the summer of 1905. How long before that it may have been known, I cannot state; but it was some time ago built into the east wall of the churchyard, not many feet to the south of the gate.

The Stone is an oblong block of blue whin, measuring 18 by 13½ inches. It contains sixteen plain cups which vary in diameter from 3 inches to 1½, and are all deep and neatly executed.

*No.* 7. *Kirkmuir, Kirkdale, Stewartry of Kirkcudbright.*—In a former paper[1] I put on record, through the readily afforded help of Mr Adam Birrell of the Creetown Salmon Fishings, a fine group of cup- and ring-marks found on Cambret Moor, Kirkmabreck. In July 1903 a notice occurred in *The Kirkcudbrightshire Advertiser*, of which I give the following abridgment:—

Another interesting group of cup- and ring-markings has been discovered on Kirkmuir, near Kirkdale. Mr Robert Wilson, Cairnholy, made the discovery this spring. They are situated in a field midway between Cairnholy[2] and Kirkdale old churchyard. The plough was the first to unearth them, as they were just six inches below the surface; and on further investigation were found to consist of fourteen finely cut cups round two of which are the usual ring-marks.

The writer then goes on to note the various localities in the Kirkmabreck district where cup-marked stones or rocks are to be seen. These are at Ringdow, near Mossyard, at Lagganmullen, at Cauldside (on Cairnharrow), at Cambret,[3] on Glenquicken Muir, at Bardristane, and at Cardoness.

[1] *Proceedings*, vol. xxxvii. p. 219, and xxxiii. p. 369.

[2] Cairnholy and its adjacent lands are specially interesting. See *Proceedings*, vol. xxiii. p. 151, and *The Reliquary*, vol. iii., No. 14, p. 8.

[3] This Cambret sculpturing, which consists of a fine group of seven concentric rings enclosing a central cup, may quite possibly be the stone described so long ago by Rev. Andrew Symson as the "stone that hath on it that draught commonly called the walls of Troy" (see *Proceedings*, xxxiii. p. 369).

*No.* 8. *Monreith, Mochrum, Wigtownshire.*—In a recently published *brochure*[1] from the versatile pen of Mr Andrew Lang, there occurs the following brief notice :—

"I have seen the archaic patterns of concentric circles and fish spines (or whatever we call the medial line with slanting side lines) neatly designed in white on the flagstones in front of cottage doors in Galloway. The cottagers dwelt near the rocks with similar patterns on the estate of Monreith."

Under the impression that the rocks at Monreith with concentric rings, etc., had never been recorded, I at once, on reading the above passage, wrote to Sir Herbert Maxwell. His reply was to the following effect :—

"There are several (four)[2] cup- and ring-marked rocks on this estate, most of which I caused the Ordnance surveyors to mark on their latest maps. One rock, a glaciated surface of Lower Silurian, within a mile of this house, bears a very extensive group. The road-surveyor began quarrying for road-metal there some years ago, and brought me word of the sculptures, which he found upon stripping the turf. I stopped the destruction, and had the rock scheduled as an ancient monument. The remainder of the turf has never been removed, so I do not know how far the carvings extend. There are three large monoliths in the next field, 9 and 10 feet high. The place is called Drumtrodden = *Druimtrodain*, "The ridge of strife."

This discovery, and the prompt action taken by Sir Herbert Maxwell towards the preservation of the sculptured rock, occurred so long ago as 1883. Three years later an account of some of these sculptured surfaces appeared in *The Galloway Gazette*, accompanied by (so far as I recollect) only one illustration. This was described and reproduced[3] in my last notice of Cup- and Ring-marks.

In another letter Sir Herbert Maxwell names four other farm-lands as having rock-sculptures. These are: Barwinnock, Balcraig, Knock, and Blairbuy. Of none of these have we as yet any record whatsoever.

[1] *The Clyde Mystery*, p. 93.

[2] *Five*, in reality, as will be seen later on.

[3] *Proceedings*, vol. xxxvii. p. 222.

## III.

### THE CEMETERY OF NUNRAW, EAST LOTHIAN. By The Hon. J. ABERCROMBY and Mr A. MACTIER PIRRIE.

During the process of ploughing a field on the property of Col. W. W. Gray of Nunraw, in the parish of Garvald, East Lothian, a cemetery was brought to light. The field lies on the top of the right bank of the burn which flows past the village of Garvald, and is exactly opposite it

Fig. 1. The field from which the bones were exhumed.

(fig. 1). I made my first visit on 21st December 1903, and again in company with Mr Pirrie, assistant-demonstrator to Professor Cunningham, on 23rd February 1904. As the weather was very inclement on both occasions, I am indebted to Mr James Boucher, schoolmaster in Garvald, for the use of his notes in addition to my own.

Altogether twenty-four graves were discovered, lying in five rows from 9 to 10 feet apart. These graves consisted of stone cists constructed of thin slabs of red sandstone. In nearly every case the covering-stones had

been broken by the ploughshare in previous ploughings and had been removed, as they lay only a few inches below the surface. The long sides, the covering and the paved floor of the cists, were formed of two slabs each, and the short ends of a single slab (fig. 2). The form of the cist was not always a parallelogram, but was sometimes coffin-shaped.

Fig. 2. One of the Cists laid open and emptied.

Some of the measurements were 6 feet by 15 inches; 5 feet 2 inches long by 14 inches wide at the head and 10 inches at the foot, but 17 inches at the widest part; 6 feet long by 12 inches at the head, 9 inches at the foot, and 17 inches at the widest part; 5 feet 3 inches long by 18 inches at the head and 12 inches at the foot; 5 feet 9 inches long by 14 inches at the head, 13 inches at the foot, and 8 inches deep.

A child's grave measured 3 feet 10 inches long by 1 foot 1 inch at the head and 9 inches at the foot.

Each cist was full of fine red soil and contained a skeleton lying on its back with the head to the west and the feet to the east. No relic of any kind was discovered with any of the interments, though the earth in the coffins was well searched and the bones were picked out with the greatest care by Mr Pirrie.

From the absence of any relic it is impossible to determine with accuracy the date of this cemetery. But Professor Cunningham informs me that, judging from the condition of the bones, it cannot be of ancient date, certainly not earlier than the Christian Period.

Nunraw, as its name implies, was formerly the site of a nunnery; so at first sight it seemed probable that the cemetery was in connection with such an establishment. But, judging from the number of male skeletons and from the child's grave it has yielded, this hypothesis must be abandoned. A very similar cemetery of fifty-one cists, disposed in nine rows, was discovered some years ago near the Catstane, Kirkliston, West Lothian, and is described in *P.S.A.S.*, vi. 184–198.

Subjoined is a valuable detailed anatomical report on the human remains by Mr Pirrie.

Report on the Human Remains from Nunraw, East Lothian. By A. MacTier Pirrie, B.Sc., Anatomy Department, University of Edinburgh.

In framing this report, the bones from each cist have been described separately, as so many "Lots," each lot being from a separate cist. There are in all thirteen lots, which were exhumed on two occasions. On the first occasion, four lots were forwarded for examination. They were from the highest part of the cemetery, and were in better preservation than those exhumed later. They also included the interesting thigh-bone which evidences marks of syphilis. This is remarkable when taken in connection with the fact that the earliest recorded appearance

of syphilis in Europe is assigned by Simpson to the close of the fifteenth century.[1]

On the second occasion on which bones were exhumed, the findings were not so well preserved, as they were not interred in such dry soil. Nevertheless they have yielded several points of anthropological interest such as are seen in characteristics and configurations associated with the races of bye-gone days, or with the lowest savages of the present time. It is noteworthy that caries of the teeth is completely absent in this series, notwithstanding that the majority of the teeth are ground flat with use.

At the end there is a short summary giving some of the more important conclusions as to sex, age, etc., with references to the detailed description in the text.

The bones are to be seen in the Anatomy Department, University of Edinburgh.

## LOT No. 1.

General Description.—A thigh-bone of great interest, as it depends upon the date assigned by the archæologists to the burying-ground whether this is not the earliest specimen of syphilis on record, for on the lower part of the bone there are undeniable marks of syphilis. Otherwise the bone shows some degree of platymery, and a high degree of carination, both being characters frequently associated with the femora of prehistoric races of man. It is a bone of an adult, but not aged person, probably of the female sex.

Detailed Description.—The right femur. It does not present senile characters, and it is on the whole rather slender. At the lower third of the shaft it shows an oval thickening, rough behind, but smooth in front, pronouncedly syphilitic (fig. 3).

| | | |
|---|---|---|
| Length | (maximum) | 419 mm. |
| „ | (oblique) | 412 „ |

Platymery well marked.

*Index of platymery:* $\frac{21 \times 100}{32} = 65{\cdot}6.$

Carination prominent.

*Pilastric index:* $\frac{28 \times 100}{24} = 116{\cdot}6.$

♀ (probably); fully adult; syphilitic.

[1] *Archæological Essays*, by the late Sir James Y. Simpson, Bart., M.D., D.C.L., edited by John Stuart, LL.D., 1872, vol. ii. p. 303.

LOT No. 2.

General Description.—A large number of fragments taken from one cist. The bones being very brittle, are in small fragments. They are the bones of a well-developed male of middle age.

Detailed Description.—The bones consist of: (1) parts of skull;

*a.* *b.*

Fig. 3. Thigh-bone with thickening at lower end (syphilitic), from Lot 1.
*a.* Posterior view.
*b.* Postero-internal view.

Fig. 4. Thigh-bones, right and left, from Lot 2, showing marked flattening at upper ends, *i.e* Platymery. (Both front view.)

(2) 2 vertebræ; (3) humerus (right and left); (4) clavicle; (5) radius and ulna; (6) femora; (7) tibiæ and fibulæ; (8) fragments.

(1) *Skull.*—Inferior maxilla (right ramus and upper part of left ramus lacking). It is a narrow bone with pointed chin. Genial tubercles are well marked. It is a strong and heavy bone. The teeth (5 molars and 2 premolars), are all worn flat on the surface but exhibit no caries.

Left superior maxilla: the antrum appears well developed, and the palate a little higher arched than normal.

Teeth: 1 molar, 2 premolars, 1 canine, and 1 lateral incisor.

Temporal bones: well-developed mastoids.

(2) *Vertebræ.*—These belong to the dorsal region.

(3) *Humerus* (right and left).—Strong, well-developed bones with well-marked musculo-spiral groove.

(4) *Clavicle* (left).—This bone is markedly curved and more slender than the other bones. It is also very long, indicating that the individual was comparatively broad-shouldered.

(5) *Radius* (left); and *Ulna* (right).—Stout bones with powerful muscular markings.

(6) *Femur* (right).—Strong and long, but the head is absent. The upper part of the shaft is markedly flattened, *i.e.* exhibits platymery (fig. 4).

$$\textit{Index of platymery:} \quad \frac{2{\cdot}3 \times 100}{3{\cdot}6}\text{; } i.e.\ 63{\cdot}9.$$

*Femur* (left).

$$\textit{Index of platymery:} \quad \frac{2{\cdot}4 \times 100}{3{\cdot}5}\text{; } i.e.\ 68{\cdot}5.$$

This indicates that the amount of flattening is greater on the right than on the left side.

Associated with the platymery there is a well-marked hypotrochanteric ridge and hypotrochanteric fossa.

(7) *Tibiæ and Fibulæ* (incomplete).—Only the upper part of the right tibia and head of the left tibia are preserved; the fibulæ also are in fragments.

These fragments merit no special description.

(8) *Fragments.*—These include a large number of small pieces of ribs, vertebræ, scapulæ, skull, and other parts.

They have been examined, but present no characters worthy of description.

♂; middle-aged; strongly built.

## LOT No. 3.

General Description.—This lot includes some very well-preserved bones, as well as a number of fragments. The bones are those of a male, of mature adult life, perhaps approaching 50, of very powerful build.

Detailed Description.—The bones include: (1) inferior maxilla; (2) superior maxilla; (3) frontal; (4) temporals; (5) basi-occiput; (6) atlas; (7) axis; (8) vertebræ; (9) clavicle; (10) fragments.

(1) *Inferior maxilla.*—This is a most handsome bone, powerfully and massively built, with a complete set of teeth which are perfectly preserved, though the crowns are worn with use, the effect being similar to what is seen in the dentary arcades in the Australian savage (fig. 5).

The genial tubercles and muscular impressions are very prominent; chin square and projecting.

| | |
|---|---|
| Symphysial height | 31 mm. |
| Coronoid height | 61 „ |
| Condyloid height | 67 „ |
| Intergonial width | 104 „ |
| Gonio-symphysial length | 83 „ |
| Breadth of asc. ramus | 36 „ |
| Angle about | 115° or 120°. |

The teeth are fairly large, probably pretty highly mesodont in character.

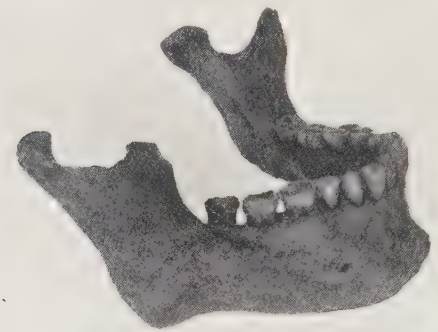

Fig. 5. Lower Jaw, from Lot 3.

(2) *Superior maxilla.*—Character in keeping with the inferior maxilla. The teeth are all preserved, are large, and are worn flat on the surface. The central incisors are very heavy teeth, and separated by a gap. The antrum of Highmore on the left side is much less developed than on the right; it only reaches to the first molar tooth. It is not possible to determine the palatal index. The hard palate is high, but has a flat roof, giving a rectangular appearance on transverse section. From the character of the bone, especially when placed *in situ* with the inferior maxilla, probably this skull was prognathic, though it is not possible to measure the amount (fig. 6).

(3) *Frontal.*—This is also a very massive bone, with large supraorbital ridges. The frontal sinuses are very large. They reach high up on the forehead, and the two sides do not communicate. There are separate loculi at the base of the nose.

(4) *Temporals.*—These bones show nothing special except very large mastoids with deep digastric grooves.

(5) *Basi-occiput.*—This is joined to the sphenoid ; the basal synchondrosis being completely ossified. The sphenoidal sinuses are large.

(6) *Atlas.*—Very well preserved.

(7) *Axis.*—Also very well preserved.

(8) *Vertebræ.*—Two cervical vertebræ both well preserved.

(9) *Clavicle* (left).—Muscular impressions not remarkably prominent, nor the bone particularly long.

(10) *Fragments.*—These belong to the vault and base of the skull ; left scapula (which is powerful) ; ribs, etc.

♂ ; probably about 50 ; very powerful build.

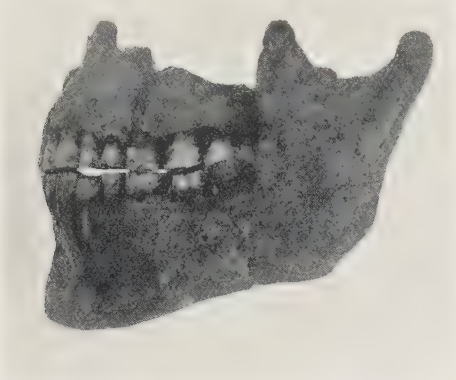

Fig. 6. Upper and Lower Jaws, from Lot 3. The upper front teeth do not overlap the lower set, but are "apposed." They are therefore ground flat, not chisel-wise.

## LOT No. 4.

General Description.—A shin-bone. It exhibits a sabre-like character, such as is frequently seen in certain prehistoric races. It also shows a facet similar to that which is present in those races that assume a squatting attitude when sitting. The bone probably belonged to an individual of the male sex.

Detailed Description.—The tibia of the left side. The head is absent The shaft is stout and strong. The shaft is thin and compressed from side to side, while the anterior border is sharp and convex. It exhibits "platyknemia."

*Index of platyknemia* : $\frac{22 \times 100}{33} = 66{\cdot}66.$

This index shows a high degree of platyknemia.

There is a prolongation of the tibio-astragular joint-surface on to the front of the tibia, such as is found in the Punjaubee of the present day ; this, however, cannot be regarded as affording evidence that the individual was in the habit of assuming the squatting attitude (fig. 7).

♂ (probably) ; adult ; well developed.

Fig. 7. Shin-bone from Lot 4, showing extra facet at the lower end in front.

## LOT No. 5.

General Description.—A few bones of a child of about 3 or 4 years old, consisting of fragments of skull and some teeth belonging to the first dentition. They were found in the small cist, and are much eroded with age. It is impossible to tell the sex.

Detailed Description.—The bones consist of : (1) sphenoid ; (2) petrous-temporal ; (3) teeth.

(1) *Sphenoid* (body and left wing).—It shows non-union of the basal synchondrosis.

(2) *Left petrous-temporal.*—Partly eroded and semicircular canals exposed.

(3) *Teeth.*—Four molars, 2 incisors, and 1 canine. They are typical "milk-teeth."

Child of 3 or 4 ; sex indeterminable.

## LOT No. 6.

General Description.—Portions of skull and lower jaw of a fully adult male, probably between 50 and 60 years of age.

Detailed Description.—The bones include : (1) calvarium ; (2) inferior maxilla ; (3) superior maxilla ; (4) fragments.

(1) *Calvarium.*—Is made up of frontal, parietals, and part of the occipital. The glabella, supraorbital ridges, and frontal sinuses are large. The saggital and other sutures are obliterated on the inside ; hence age and sex.

| | |
|---|---|
| Glabello-occipital length . . . . | 175 mm. |
| Greatest breadth (parietal) . . . . | 135 „ |

*Cephalic Index :* $\frac{135 \times 100}{175} = 77{\cdot}1.$

*I.e.* mesaticephalic, or, more strictly, subdolichocephalic.

(2) *Inferior maxilla.*—Well preserved, only the left articular condyle missing. The teeth are all present, but the right wisdom-tooth is not developed, or else it has been lost very early in life, which is extremely improbable. Careful dissection of the bone has failed to reveal any trace of it in an unerupted condition. Chin rounded but prominent. The angle is rounded and open.

| | |
|---|---|
| Symphysial height . . . . . | 27 mm. |
| Coronoid height . . . . . | 53 „ |
| Condyloid height . . . . . | 64 „ |
| Intergonial width . . . . . | 93 „ |
| Gonio-symphysial length . . . | 87 „ |
| Breadth of asc. ramus (right) . . . | 34 „ |
| „ „ (left) . . | 29 „ |
| Angle about . . . . . | 140° |

(3) *Superior maxilla.*—Imperfect ; several teeth missing, but the dentary arcade is handsome. No caries, but the teeth are worn.

(4) *Fragments.*—Of temporals, base and vault of the skull, ribs, and vertebræ.

♂ ; between 50 and 60.

## LOT No. 7.

General Description.—A skull, consisting mostly of the calvarium ; but the roof of the orbits and the right temporal bone are preserved. The skull is that of an adult male, probably about 50.

Detailed Description.—The bones (united together) are: (1) skull as a whole; (2) frontal; (3) parietals; (4) occipital; (5) temporal.

(1) *Skull as a whole.*—The skull is symmetrical, and not very large. The bones are light but well preserved. The sutures are all considerably obliterated on the inner aspect, and on the outside the saggital suture is obliterated at the region of the obelion. Hence the age of the skull is about 40. The following measurements it has been found possible to take; and, as the skull is in good preservation, they will be found to be reliable.

| | |
|---|---|
| Glabello-occipital length . . . . | 135 mm. |
| Greatest breadth (parietal) . . . . | 178 „ |

*Cephalic Index:* $\frac{135 \times 100}{178} = 75{\cdot}7.$

*I.e.* the skull is mesaticephalic, or, more correctly, subdolichocephalic.

| | |
|---|---|
| Minimum frontal diameter . . . . | 96 mm. |
| Stephanic diameter . . . . . | 108 „ |
| Asterionic diameter . . . . . | 100 „ |
| Horizontal circumference . . . . | 505 „ |
| Frontal longitudinal arc . . . . | 138 „ |
| Parietal longitudinal arc . . . . | 116 „ |

(2) *Frontal.*—Large supraorbital ridges, and large supraorbital notches, the right one being converted into a foramen by a spicule of bone. The frontal sinuses are large, and do not communicate. On the inner aspect of the left frontal boss there is a strange appearance of erosion; it looks pathological rather than post-mortem. It suggests some thickening (localised) of the dura. There are two deep depressions for Pacchionian bodies.

(3) *Parietal.*—Nothing to note except complete closure of the parietal foramina, and commencing obliteration of the saggital suture in their neighbourhood.

(4) *Occipital.*—Very projecting above the inion. There are several well-marked Wormian bones.

(5) *Temporal* (right).—The mastoid process is very well developed, and there is a deep digastric groove.

♂; approaching 50; moderate development.

## LOT No. 8.

General Description.—A few fragmentary remains taken from one grave. They include an imperfect lower jaw and fragments of bones of the extremities. The bones evidently belonged to a pretty aged female.

Detailed Description.—The bones consist of: (1) inferior maxilla; (2) radius; (3) tibia; (4) axis.

(1) *Inferior maxilla* (rami incomplete).—Small, prominent, and narrow chin,

and the genial tubercles are well marked. There are 7 teeth, which are considerably worn, but exhibit no caries. The right ramus is set at an angle of 140° to the body of the bone. The angle is, moreover, a very rounded one, and the bone here worn-looking and thin. These characters indicate senility.

(2) *Left radius.*—Is slender, but exhibits no special characters.

(3) *Left tibia.*—Is also slender, and exhibits no special characters.

(4) *Axis.*—A little imperfect, and the odontoid process inclines somewhat to the left.

♀ ; aged ; slender build.

## LOT No. 9.

General Description.—Very fragmented and incomplete. The bones evidently belong to a comparatively young person, of the male sex, slight in build, and rather poor in musculature. The only point of interest anthropologically is an abnormality of the frontal bone. It presents a metopic suture, a comparative rarity.

Detailed Description.—The bones consist of: (1) parts of skull; (2) humerus ; (3) femora ; (4) tibia.

(1) *Skull* (comminuted and incomplete).—The frontal bone contains large frontal sinuses, which do not communicate. The metopic suture is evident on both aspects of the bone. The basi-occipital shows non-union of the basal synchondrosis. Other portions are the right and left petrous-temporal ; and fragmented portions of frontal, parietal, occipital, and malar bones. One molar tooth is worn more than the apparent age of the other bones would indicate.

(2) *Right humerus* (lower end lacking).—The muscular impressions are fairly prominent.

(3) *Femora* (right femur).—The upper extremity and lower epiphysis are lacking. It is a long and fairly slender bone. Left femur (lower end only). The lower epiphysis is ununited.

(5) *Right tibia* (upper epiphysis and lower end lacking).—The upper epiphysis has been ununited. The muscular impressions are poor.

♂ ; under 20 ; slender build.

## LOT No. 10.

General Description.—Very fragmented portions of skull. The skull when *in situ* was much deformed, being greatly flattened transversely. The bones themselves are distorted, and some are thinned to scales. The bones are of a young adult, but it is impossible to dogmatise of which sex ; though, from the delicate nature of the bones and the character of the muscular impressions, it is more probable that the bones are those of a female.

Detailed Description.—The bones consist of: (1) superior maxilla; (2) temporals; (3) malleus and incus; (4) fragments.

(1) *Superior maxilla* (right).—This bone is interesting, as it shows an unerupted wisdom-tooth, which is in relation to the floor of the antrum of Highmore. The bone itself is small, and is obviously that of a quite young adult, not only from the character of the wisdom-tooth, but also from the position of the antrum of Highmore, which is as yet far back. Teeth: second premolar, 2 molars, and the unerupted wisdom-tooth. They are not worn.

(2) *Temporals* (right and left).—The mastoids are poorly developed, hence the probability of the bones belonging to a young female.

(3) *Malleus and incus.*—These belong to the left side.

(4) *Fragments.*—These belong to the vault and base of the skull, but call for no special notice.

♀ (?); adolescent; normal build.

## LOT No. 11.

General Description.—A skull poorly preserved, with a portion of the lower jaw. The remains have belonged to a strong woman of adult life.

Detailed Description.—The bones consist of: (1) skull; (2) inferior maxilla.

(1) *Skull.*—This is distorted and incomplete. The calvarium and left temporal bone are preserved. The sutures have sprung open, and the bones are distorted. Frontal sinuses and mastoid process small. Bosses (frontal and parietal) large. Orbits small.

| | |
|---|---|
| Glabello-occipital length . . . . . | 182 mm. |
| Greatest breadth (parietal) . . . . . | 132 „ |

*Cephalic index:* $\frac{132 \times 100}{182} = 72{\cdot}4.$

*I.e.*, dolichocephalic, but the measurements cannot be very accurate.

(2) *Inferior maxilla* (body and teeth alone).—The depth of the body is small; chin narrow, but the angle of the two sides at the chin is very wide. Teeth very irregular but large. The wisdom-teeth and the first premolar on the left side are missing. There is no caries.

♀; adult; strong; dolichocephalic.

## LOT No. 12.

General Description.—These bones are from the skull of an adult. The base of the skull is fairly well preserved, but the vault is fragmented and distorted. The sex is more probably female.

DETAILED DESCRIPTION.—The bones consist of: (1) base of skull; (2) parietal; (3) occipital; (4) fragments.

(1) *Base of Skull.*—This consists of: temporals (right and left), sphenoid, and left half of the frontal. The skull is much distorted and eroded. The frontal sinuses are very small, but the sphenoidal are well developed. The mastoids appear to be poorly developed. The sex is probably female, but it is not possible to dogmatise. Basal synchondrosis ossified.

(2) *Parietal* (left).—Shows nothing to note.

(3) *Occipital.*—Shows a small inion.

(4) *Fragments.*—Of the vault and base of the skull.

♀ (probably); adult; stature indeterminable.

## LOT No. 13.

GENERAL DESCRIPTION.—A few fragments of skull. They have belonged to a fully adult person, but the sex is indeterminable.

DETAILED DESCRIPTION.—The bones include: (1) inferior maxilla; (2) basi-occiput and sphenoid; (3) fragments.

(1) *Inferior maxilla* (right half only).—Distorted. Wisdom-tooth *in situ*, worn but sound.

(2) *Basi-occiput and Sphenoid.*—United by ossification.

(3) *Fragments.*—Of the base and vault of the skull.

Adult; sex indeterminable.

## SUMMARY AND INDEX.


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Summary of Sex.

| | |
|---|---|
| Males | 6 |
| Females | 5 (2 doubtful). |
| Indeterminable | 2 |
| Total | 13 |

Summary of Age.

| | |
|---|---|
| Under 23 | 3 (1 child). |
| 23 to 50 | 7 |
| Over 50 | 3 |
| Total | 13 |

Monday, 14*th May* 1906.

Mr THOMAS ROSS in the Chair.

A Ballot having been taken,

Donald Graham Campbell, M.B., C.M., 30 North Street, Elgin,

was duly elected a Fellow of the Society.

The following donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By Norman B. Kinnear, 12 Grosvenor Crescent.

An ornamented Fillet of thin Bronze, and five Bosses of Bronze, found together in Dumfriesshire many years ago, the locality being now unknown.

The Fillet, of which a portion is shown of the actual size in fig. 1, has originally exceeded 18 inches in length, and seems to have been of the uniform width of $1\frac{1}{8}$ inches, ornamented in delicate repoussé work, with a running scroll half an inch in width of leafless shoots, intertwining and terminating in triplets of fruit, the scroll being bordered on both sides by an arcaded margin, less than a quarter of an inch in width, having very

small bosses between the convexities of the semicircles of the arcade. The scroll-work has much in common with that of the scrolls on the sculptured monuments of Northumbria.

Portions of five or six bosses of thinnish bronze, about $2\frac{1}{2}$ inches in diameter. These appear to have been fixed on something, as they have small pin-holes about $1\frac{1}{2}$ inches apart, round their outer margins. They are all plain and much broken, and seem to have had but a slight convexity in most cases, one only showing a height in the centre of about half an inch.

Stone Mould found also in Dumfriesshire, $3\frac{1}{2}$ inches in length by $2\frac{3}{4}$

Fig. 1. Portion of a Fillet of Bronze ornamented in repoussé with a running scroll. ($\frac{1}{1}$.)

inches in breadth at the widest part, narrowing considerably towards one end, the thickness being about half an inch throughout. On one face are four dowels to fit the wanting half of the mould. On this face also are three moulding cavities, each having a separate pouring channel continued to the outside edge of the stone. One is intended to cast a kind of trefoil-shaped pendant $1\frac{3}{4}$ inches in length and $1\frac{1}{2}$ inches in breadth, with a square projection at the top half an inch in width and projecting about a quarter of an inch, having in its centre a square hole nearly a quarter of an inch wide. In each lobe of the trefoil-shaped part is a boss having a small boss on its summit surrounded by four small bosses at equal distances. In the centre between the three lobes of the trefoil is a small boss surrounded by six smaller bosses, and the

outlines of the trefoil shape are margined by closely set bosses of the smaller size. A boss of the same size as the one in the centre is placed at the lower point of the trefoil shape.

The second moulding cavity is for a pendant of the shape of a heart, measuring about $1\frac{1}{8}$ inches in height and the same in greatest width, having a semicircular projection at the top pierced with an aperture for suspension. The heart shape is outlined by a finely beaded line and rises to a slight convexity in the centre. The marginal portion round the heart shape is outlined in semicircular projections, each containing a small ring with a tiny boss as a centre. The interior of the heart shape is filled with similar rings and tiny central bosses.

The third moulding cavity is for a small boss five-eighths of an inch in diameter, the convex surface of which is studded with extremely tiny bosses or projections.

The reverse face of the mould has a large shallow moulding cavity $2\frac{3}{8}$ inches in length, and $2\frac{1}{4}$ inches in width at the one end and $1\frac{3}{4}$ inches at the other. The cavity is flat in the bottom but has double parallel lines scored pretty deeply lengthwise down the centre, and a triple set along one side, which has also a row of marginal projections nearly half an inch in length and about a sixteenth of an inch apart. These projections have rounded ends, and are lined across by three ribs. There has been some more recent scoring in the flat bed of the mould, so that it is uncertain how many of the parallel lines running lengthwise along it may be original.

Seven small Tobacco Pipes of seventeenth or eighteenth century, found in Dumfriesshire. Most of them have stamps on the heel of the bowl, some showing a triple-towered castle, one a wheel-like device with dots between the spokes; one has the initials PP or RP on a heart-shaped stamp, and two have the initials IC with G below.

(2) By Robert H. Bell, Symbister, Whalsay, Shetland.

Small oval Cup of steatite measuring $4\frac{1}{2}$ inches in length by $3\frac{1}{2}$ inches in greatest breadth and $1\frac{1}{2}$ inches in depth, the bottom rounded both

inside and outside, and the sides slightly bevelled at the top. It was found in the neighbourhood of the ruins of a supposed broch at Symbister.

(3) By Lewis Bilton, W.S., F.S.A. Scot.

Description of the City House of Amsterdam, with an explication of the Emblematical Figures, Painting, and Images, etc., which are within and without this glorious building. At Amsterdam. By Peter Mortier. With privilege. 1766. 12mo. With four folding plates.

(4) By the Rymour Club, Edinburgh, through Alan Reid, F.S.A. Scot., their Secretary.

Miscellanea of the Rymour Club. Part I., 1906. Printed for members only.

(5) By Miss Amy Frances Yule, *Lady Associate.*

Tally-stick of the reign of Charles II., from the Treasury Records of Bombay. It is a split stem of a light, soft wood, which has been about an inch in diameter, but is now cut nearly square in section, the corners showing over an eighth of an inch of the silvery bark. At a distance of $2\frac{1}{2}$ inches from one end the squared stick has been cut obliquely across to a depth of a little more than half its thickness, and then split longitudinally all the way to the other end, which is pointed by two sharp cuts meeting each other obliquely in the middle. Counting from the point, there are ten nicks made on the side of the tally, which would also be marked on the corresponding half. Along the broadest edge is written :—Gubernator et Societas Mercatorum Negotiantium ad Indos Orientales pro Redditu per ipsos solubili in Anno pro Portu et Insula de Bomboij apud Indos predictos virtute Literarum Patentium sub magno Sigillo Anglie datarum xxvij$^{mo}$ Martij Anglia Anno nuper Caroli Secundi xx$^{mo}$ pro uno anno finito xxx die Septembris ultime preterito Michaelis xxiiij die Januarij Anno Jacobi Secundi iij.

In a letter accompanying the donation, Miss Yule says :—"The

tally-stick is stated to have formed part of the Treasury Records of Bombay in the reign of King Charles II., after his acquisition of that valuable dependency. It came into my possession in the following manner. In or about 1886, a few of these tallies turned up unexpectedly among the records at the India Office, and some of the then members

Fig. 2. Symbols on Stone at Advie, Strathspey.

of Council who were interested in the find received permission each to take one. The tally-stick which I now present to the Museum fell to the share of my father, the late Colonel Sir Henry Yule, R.E. I am afraid that those not appropriated were destroyed, but am not certain."

(6) By Rev. J. M. Joass, LL.D., Golspie, Corr. Mem. S.A. Scot.

Rubbing, with a reduced pen-and-ink Drawing (fig. 2), of a hitherto

undescribed Sculptured Stone with symbols, now built into the vestry wall of the church at Advie, in Strathspey. The rubbing was sent to Dr Joass by W. Forsyth, Esq., M.D., of Bombay, who had observed the stone when on a visit to Advie. The history of the stone, so far as known to Rev. John Liddel, minister of the parish, is that it was believed to have been found in the old burial-ground of the parish near the river, and about a mile distant from the present church. It was at one time used as part of a lintel of a window in the old church, and after this was pulled down it was fixed in a wall to serve as a projecting stepping-stone. From this position Mr Liddel rescued it, and had it fixed for preservation in the vestry wall, where it now is. The stone is 3 feet in length by 1 foot 4 inches in greatest breadth, but is not complete, having been broken lengthways, as shown by the absence of the half of the crescent symbol on the right side. Dr Joass's drawing (fig. 2) gives a good idea of the incised symbols remaining on the broken stone, and he observes that the same two symbols occur in the same relation to each other (or nearly so) on a stone with four symbols at Inverury, Aberdeenshire, and on another stone at Mounie, in the same county, although in both these cases the symbols are less elaborately filled in.

(7) By Rev. Alexander Mackintosh, as executor of the late Rev. Allan M'Donald, Eriskay, South Uist.

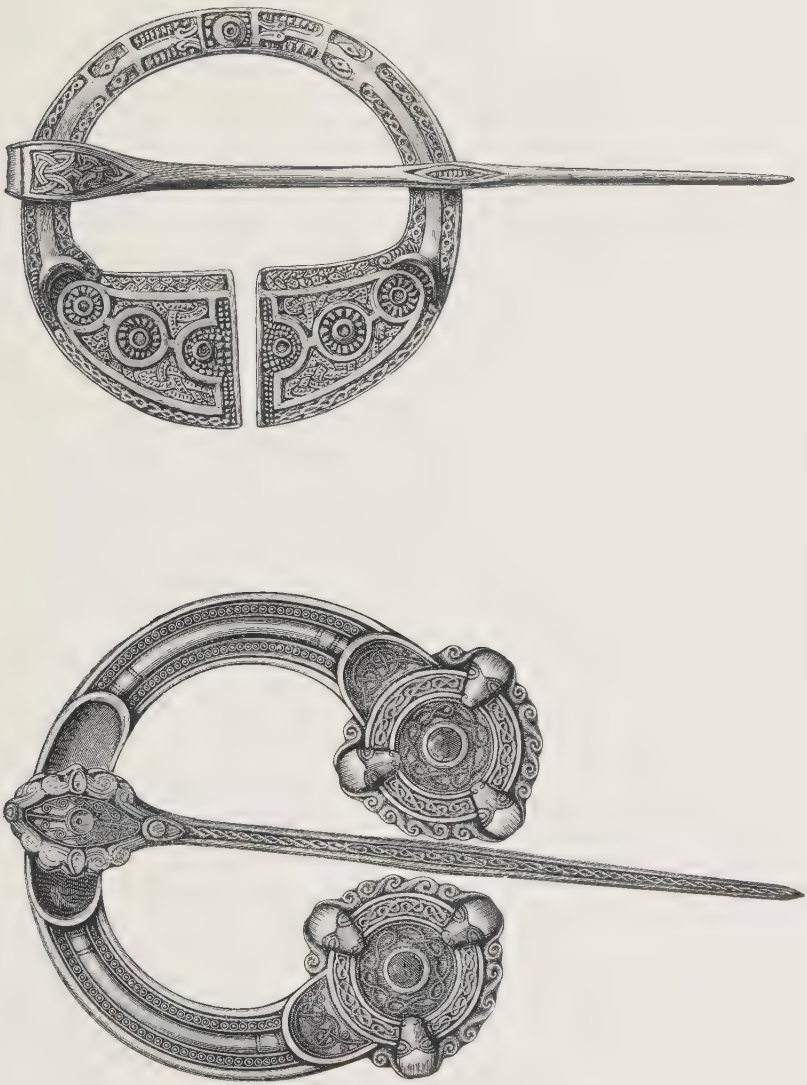
Bronze hilt and pommel of an iron double-edged Sword of the Viking time, iron Spear-head, and quadrangular Whetstone, dug up by the late Rev. Allan M'Donald, in the island of Eriskay, South Uist. [The sword-hilt is figured, and it and the other articles described, at p. 215, *antea*.]

The following purchases acquired by the Purchase Committee for the Museum and Library during the session 30th November to 14th May, were exhibited:—

Two Celtic Brooches of Silver, found many years ago in the neighbour-

hood of Perth. These brooches were first exhibited to the Society by the late Mr Andrew Heiton, F.S.A. Scot., in whose possession they then were, in 1872, and are noticed in the *Proceedings*, vol. x. p. 27, but without detailed description or illustration. They were afterwards described with illustrations by Dr Joseph Anderson in the *Proceedings*, vol. xiv. p. 449.

The smaller and finer of the two brooches (fig. 3) is of silver and penannular, the ends terminating in circular expansions. The penannular ring of the brooch is a flat band half an inch in width, ornamented by two rows of gilt bosses in a sunk panel. A raised band of semi-cylindrical form separates the two rows of bosses, and divides the panel into two equal parts longitudinally. The middle part of the ring of the brooch opposite to the penannular opening is occupied by an oblong panel with rounded ends, the flat bottom of which was originally covered by a gold plate ornamented with filigree work. This had been extracted and melted before the brooch came into Mr Heiton's possession. Towards the terminations of the penannular ring, where they join with the circular discs which form the expanded ends, there are half-oval panels similarly filled with gold plates ornamented with filigree work. From one of these half-oval panels the gold plate has been extracted and lost, but it remains in the other, and presents the figure of a serpentine creature twisted into a double figure of eight, formed by fine filigree work of beaded or notched gold-wire. The circular discs forming the penannular terminations have a chased border of S-shaped scrolls. On this border rest the heads of three dog-like animals placed with their muzzles projecting towards the centre of the disc and dividing the circular space into three sections. The centre of the disc is occupied by a setting of red glass fixed in a thin circular plate of gold three-quarters of an inch in diameter, ornamented with a figure of eight pattern in filigree work of beaded gold wire. Surrounding this central plate is a concentric circular border three-sixteenths of an inch wide, enclosed between raised margins of silver, and subdivided into three panels of equal length by the heads of the dog-like animals before mentioned, whose muzzles extend across



Figs. 3 and 4. Two Silver Penannular Brooches found near Perth. Pin of fig. 3, 5½ inches in length. Pin of fig. 4. 8½ inches in length.

the panel to the inner raised margin. These panels are filled with thin plates of gold decorated with an interlaced pattern in plain raised lines. The pin of the brooch, $5\frac{1}{2}$ inches in length, is loosely attached by a loop passing round the back of the ring, which gives it free play. The head of the pin is expanded into a convex oval with a central setting, now gone, surrounded by an oval panel ornamented with double-spiral scrolls of beaded filigree implanted on gold plate. A chased and gilt pattern of interlaced work runs down the whole length of the front of the pin.

The larger brooch, which is also penannular in form, with expanded ends, is decorated entirely by chasing. There is no gold plating and no filigree. The ring of the brooch shows a small boss in the middle of its curvature opposite to the penannular opening, and the spaces between this central panel and the commencement of the expanded ends are filled on either side with a species of lacertine decoration, the body of the animal being indicated by a semicylindrical band along the middle of the panel lengthways, from a fish-like tail-piece to an exceedingly rudely indicated head with lozenge-shaped eyes and a projecting snout. The spaces on both sides of the body are filled with simulated interlaced work. The expanded ends are nearly triangular in shape and richly chased. The outer curve of each shows a narrow border filled with a simple plait of two strands, the inner border a thicker plait roughened on the surface with pellets. The spaces between these borders are filled with two rosette-like figures, one of which is in the rounded corner of the space; the other is almost in the middle of the field, which is covered with interlacements, roughened with pellets. The pin, which is $8\frac{1}{2}$ inches in length, has a loop going loosely over the back of the ring of the brooch, and is ornamented by a triangular pattern of interlaced work on the front of the upper part and a small oval in the middle of its length.

A polished Stone Axe of indurated clay-slate, $3\frac{7}{8}$ inches in length by $2\frac{1}{8}$ inches in greater breadth at the cutting edge, and three-quarters of an inch in thickness, the sides rounded off, and tapering to the butt, which is slightly broken, found at Forgandenny, Perthshire.

Polished Adze of porphyritic stone, $10\frac{1}{4}$ inches in length, $2\frac{3}{4}$ inches in breadth above the rounded cutting edge, and $1\frac{1}{4}$ inches in greatest thickness, the sides swelling slightly from the cutting edge upwards to about one-third of the length, and tapering thence to a rounded butt $1\frac{1}{2}$ inches in width. One face of the implement is flattened to a slight curvature near the sides, the other face is boldly rounded, and the flatter face shows polish by friction where it has been fixed on to the handle. This fine adze was found in a moss in Delting, Shetland.

Axe of greenstone, $6\frac{1}{4}$ inches in length by 2 inches in breadth above the rounded cutting edge, and $1\frac{1}{4}$ inches in thickness, the sides rounded and tapering to an ovally rounded butt, found at Dunnottar, Kincardineshire.

Five hundred drawings, sketches, and sheets of measurements of the Ecclesiastical Buildings and Monuments in Iona, made by the late Sir Henry Dryden, Bart., 1874–1877.

There were exhibited :—

(1) By Mr John M. Orr, Saltcoats—

Three of the Cinerary Urns found in the Cairn at Stevenston.

(2) By Bailie Joseph Downes, Irvine—

Cylindrical Beads of Greenish Vitreous Paste, found in Stevenston Sands.

(3) By Dr Mungle, Kinross—

Pounder of Quartzite, found in the Stone Circle at Orwell, Kinross-shire.

The following Communications were read :—

I.

NOTICE OF A JUG OF PECULIAR FORM FOUND AT FORFAR, WITH AN ADDITIONAL NOTE ON THE OCCURRENCE OF EARTHENWARE JUGS OR JARS BUILT INTO THE WALLS OF DWELLING-HOUSES IN SCOTLAND. By ALEXANDER HUTCHESON, F.S.A.Scot., Broughty Ferry.

On 29th May 1905, in a conversation with Mr William Cargill, builder, Forfar, he told me of a remarkable Jug (fig. 1) which he had found in Forfar during some excavations about eighteen years before.

The Jug was found in clay, at a depth of about 2 feet from the surface, in a low-lying district of the town, now known as Canmore Park. The Jug is now in possession of Mrs Alex. Cargill.

It is of reddish clay, fully a quarter of an inch thick, well formed, like the ordinary domestic jug, with a moulded bow-handle on one side, bulging body, slightly moulded narrow neck, very slightly everted at the lip, which at front has a small depression or a spout.

The Jug, which measures $10\frac{1}{2}$ inches in height, $3\frac{1}{2}$ inches diameter at mouth, $8\frac{3}{4}$ inches at widest part, and 6 inches across where the bottom begins, is in perfect condition, except that it has lost, probably from long immersion in damp soil, a yellowish-green glaze with which it had at one time been covered, evidences of which exist in small patches here and there over its surface.

The remarkable feature of the Jug, however, is in the form of the bottom, which is rounded, so that it cannot stand in an upright position, but is in danger of falling over on its side. To prevent this it has, arranged at about equal distances apart round the bottom, a series of three groups of slight projections formed by the impress of the finger-points of the maker, who, by pulling downwards the soft clay, has formed a slightly serrated edge, which (like the legs of the once familiar three-legged pot) serves the purpose of keeping the round-bottomed vessel from capsizing, since, in whatever direction the Jug should incline,

it is always caught and held by two of the three groups of ridges referred to. This is well shown in the accompanying photograph (see fig. 1).

This feature of groups of finger-prints around the base of a jug is not

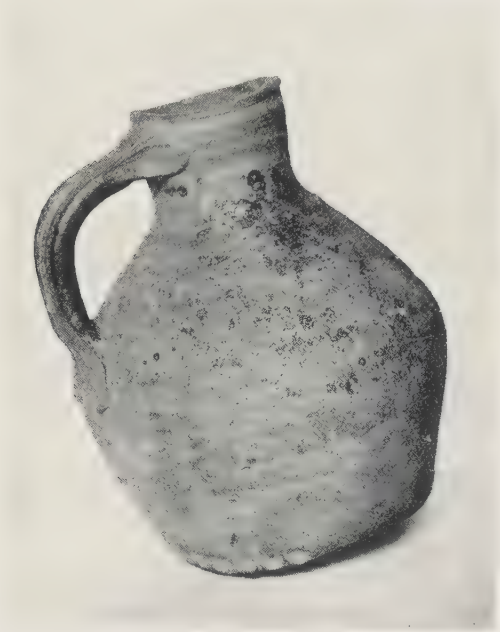


Fig. 1. Earthenware Jug found at Forfar.

unknown. Several jugs, but with flat bottoms exhibiting groups of finger-prints, are preserved in the Guildhall Museum, London, and are illustrated in the catalogue.[1] The Guildhall examples may possibly be regarded as more recent types, interesting as exemplifying a survival of a practice which, but for the discovery of this Forfar jug, might have been regarded as purely ornamental.

[1] Guildhall Museum Catalogue, Plate LXVI., Nos. 8 and 9, LXVII., 9 ; pp. 178, 63 ; 180, 109 ; 180, 104.

The Guildhall flat-bottomed jugs with finger-pressed bases are ascribed to the fourteenth century. In the Guide to English pottery in the British Museum, there is a jug illustrated similar to one shown in the Louterell Psalter of early fourteenth century. It has a slightly convex base, with the edges thumbed down to form a series of supports which counteract the rotundity of the base.

The photograph by Mr David Barnet, Science and Art Master, Forfar, was obligingly procured for me by Mr John Knox, The Schoolhouse, Forfar, to illustrate this paper.

Additional Note on the Occurrence of Earthenware Jugs or Jars built into the Walls of Dwelling-Houses in Scotland. By Alexander Hutcheson, F.S.A. Scot.

Since writing the note which appeared in last year's *Proceedings* (see *Proc.*, xxxix. pp. 387–393), I have learned of yet another instance of the practice in Dundee. The house, a building of three storeys, still stands at the east end of Castle Lane, fronting to a narrow wynd, which turns off abruptly to the south, anciently known as "The Gote," or "Goat Wynd." In the south gable of this building, in the course of its being repointed, two jugs were recently discovered and removed. They were placed "high up" between the windows, and with their orifices flush with the external surface of the wall, as already described for all the other examples noted; but one of the jugs is the largest of all the specimens yet observed. It was broken when discovered, and broken still more in removal, so that its height cannot be ascertained, but it measures $9\frac{1}{2}$ inches in diameter at the widest part, 4 inches across the base, and in its broken state $10\frac{1}{2}$ inches in height. It has at one side the base of a handle, marked with double depressions as of the thumbs of the maker. Assuming this handle to have been of the bow-form, like that of the other jugs noted, this specimen had been at least 12 inches in height.

The previously noted Dundee examples averaged 5 to 6 inches, while those found at Innernethy were 9 to 10 inches high. The destruction

of the neck is much to be regretted, as from a small fragment left it appears to have been richly ornamented, as shown by a ring of festoon-like scollops, partly indented and partly raised, with alternately moulded bands encircling it.

No evidence is available as to when this building was erected, but there is no reason to ascribe it to a time more remote than the beginning of the eighteenth century, in which case it would be the latest example of the jug practice, which I had ascribed to the hundred years from 1580 to 1680, a period which I have supposed to be covered by the other examples noted.

## II.

### NOTICE OF AN EARTH-HOUSE AT ARDROSS, FIFE.

By P. MACGREGOR CHALMERS, F.S.A. Scot.

The Largo Field Naturalists' Society were searching in the East Cairn Park, on the farm of Ardross, near Elie, Fife, when, on the 27th March 1878, Mr John Luke discovered an Earth-house, but at a point east of that indicated by local tradition. Reference was made to the discovery at the time in the local newspaper, and in the Society's *Proceedings*, vol. xii. p. 626, in a communication by Mr Charles Howie, Secretary of the Largo Field Naturalists' Society. A plan was made in the following August by Mr Boothby of Kirkcaldy.

The field was being ploughed on the 2nd March last, when one of the roof-stones of an earth-house was acidentally discovered. The building was examined on the 5th March. When compared with Mr Boothby's plan in the possession of Mr Jamieson, Mr Baird's factor, it was found that this was the same structure as that discovered in 1878.

As no plan accompanied the original notice in the Society's *Proceedings*, it may be of interest now to complete the record by the plan (fig. 1) and description here given.

The site of the structure is near the summit of the rising ground, about a quarter of a mile north of the farm of Ardross. It commands a

wide view. The entrance is on the east side. The floor of the passage is reached by a stair of ten well-constructed steps leading downwards. Unfortunately the walls and ceiling at this part have been destroyed, and it is impossible to determine the character of the entrance. The height

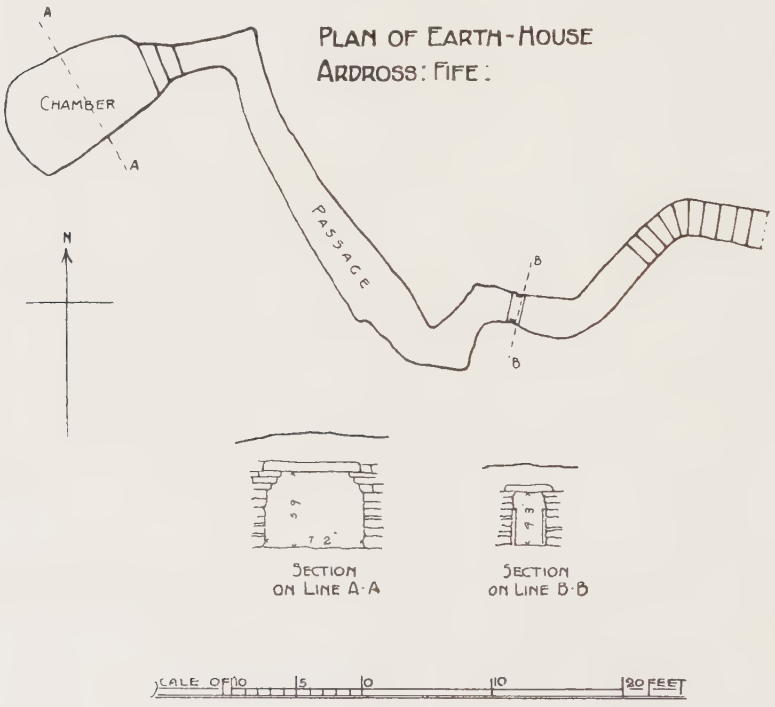



Fig. 1.

of the ceiling of the passage is 4 feet 2 inches, measuring from the top of the lowest step. The floor is of compact sand. The walls are constructed without mortar, of small undressed fragments of local sandstone, roofed over with slabs of the same material. The passage is about 2 feet 6 inches wide, and about 4 feet high. Two jambs, 3 inches

thick, project from the walls some distance from the entrance, narrowing the passage-way to 1 foot 10 inches. The stones are 2 feet 6 inches and 2 feet 9 inches high, and they rest upon a sill-stone 12 inches broad. There is a small recess or pocket in the wall, 10 inches west of the south jamb. Its edges have been worn smooth. The ceiling is reduced to 3 feet 6 inches in height, at a point 2 feet east of the jamb-stones. The total length of the passage is about 60 feet. The chamber at the west end is 12 feet 8 inches long, 7 feet 2 inches broad, and 5 feet 9 inches high. The level of the floor is three steps lower than the level of the passage. The walls lean towards each other, so that at the ceiling they are only 5 feet 6 inches apart. The roofing stones are $7\frac{1}{2}$ inches thick.

A carefully tooled stone was discovered in the east wall of the passage near the ceiling, and about 8 feet from the north angle before the passage turns westward to the chamber. It is 6 inches square, smooth on the surface, but marked by thin concentric lines. There is a circular hollow in the centre, 3 inches in diameter, and $1\frac{1}{4}$ inches deep.

A broken and irregular block of whinstone was found detached in the débris at the entrance staircase. It is 2 feet 2 inches long, $8\frac{1}{4}$ inches thick, and is now 14 inches in breadth. There is a socket-hole $1\frac{1}{4}$ inches in diameter and 2 inches deep about $2\frac{1}{4}$ inches from the broken edge, and nearly equidistant from the other three sides. The surface is not perfectly level, but slopes downward a quarter of an inch all round from the level of the socket-hole. The surface is marked by concentric scratchings caused by some circular grinding action.

There is some reason to believe that local tradition is well founded, and that there are other early structures in this East Cairn Park to the west of the Earth-house now described. Mr Berwick, of Ardross Farm, has marked the site of a group of stones under the surface of the field, which may be investigated after harvest.

## III.

NOTICE OF THE EXPLORATION OF THE CASTLE ON THE ISLE OF LOCH DOCHART, PERTHSHIRE. By Mrs PLACE of Loch Dochart. With Drawings of the Objects found, by Mr GORDON PLACE, and Plans and View of the Castle by Mr THOMAS ROSS, Architect, F.S.A. Scot.

This ruined castle is situated on an island in Loch Dochart, about $1\frac{1}{2}$ miles down the river from Crianlarich Railway Station. The loch, island, and castle are all of small dimensions. The island is not much beyond a stone-throw from the level southern shore, along which the road and railway pass, and a little more from the northern, which is, however, the descent of a lofty precipitous mountain. It is fully an acre in extent, is thickly wooded, and is generally rocky and precipitous, rising perhaps about 18 feet at the highest part above the water. The landing place is on the east side, in a little bay which just holds a rowing boat. (See fig. 1.) Besides the Castle, there are on the island the ruins of two buildings, probably offices, and on the highest part the foundations of a small round structure.

Few oral traditions appear to have gathered around this castle, probably because it was long ago burned with such intent and complete finality. There is a tradition that it was once (or that there was on the island) a religious house. We have in our house at Loch Dochart a very curious old coloured print called "Loch Dochart, Western Highlands. I. Walmsley, pinxit; F. T. Sargent, Sculpt, 1718." This, although like the rocky island and possibly like the road before the railway was made, and in outline like the castle, gives large ecclesiastical Gothic windows. Now, the window in the east gable, very ruinous and broken, has been a lofty narrow one going through two storeys, and probably had a pointed form at the top, which may have given rise to the religious-house tradition. Otherwise the windows are small.

Some guide-books say that Bruce sheltered here after the battle of

Dalry, a few miles further up the glen; and quite recently photographers have begun to print views of the building as "Rob Roy's Castle, Loch Dochart," neither statement resting on any foundation—as from the *Black Book of Taymouth* (p. 35) we learn that Sir Duncan Campbell, seventh Laird of Glenorchy, "biggit the howss of Lochdochart, for the workmanship quhairof he gaiff twa thowsand markis, anno"—; the date is not filled in, and can only be fixed as between

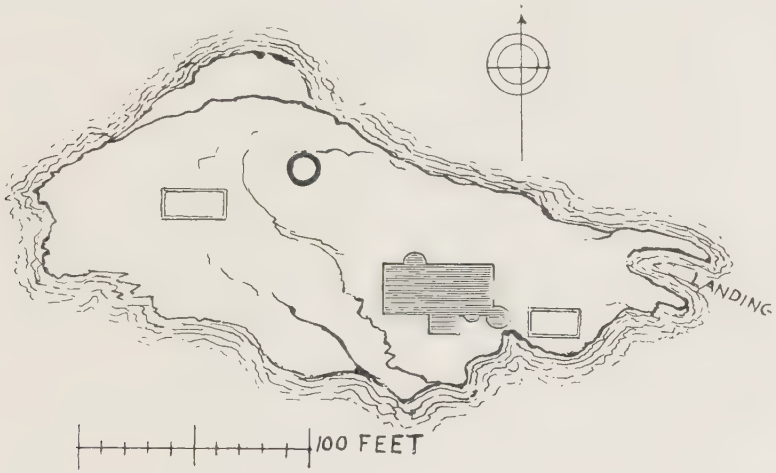



Fig. 1. Plan of the Island in Loch Dochart. By Thomas Ross, F.S.A. Scot.

the year of his succession, 1583, and the year of his death, 1631. The house cost him about £1333. The broken stone tablet with his coat of arms (fig. 2) was found near the doorway. It is quartered 1st and 4th, Campbell; 2nd, the Lordship of Lorn; 3rd, Stewart of Lorn. The ninth Laird of Glenurchy, Sir Robert Campbell, who succeeded in 1640, gave to Alexander Campbell, his fourth son, "the lands about Loch Dochart, viz.:—the Yll of Lochdochart and Loch, the port of Lochdochart, Cremlarich, Innerhariff, Gynith, Innerhaggerneybeg and Innerhaggerneyemoir, with the scheillis of Conench, Doonich, and Learagan, quhich ar holdine in feu of the house of Glenurquhay."

The estate of Loch Dochart was acquired by my husband's grandfather, Mr Edward Place, of Skelton Grange, York, after his marriage with Lady Ann Gordon in the year 1798 or 1799.

Till about the year 1890 the castle was completely buried in its own

Fig. 2. Stone Tablet with Armorial Bearings of Sir Duncan Campbell of Glenorchy.

ruins. The great tower-like chimney stood up on the south, and the outer corner of the walls could be traced, and a good height of both east and west walls remained. The place was in a state of great confusion, and one had to force one's way through brushwood and midges, and somehow found oneself on a most uncomfortable and unaccountable heap of stones, greatly overgrown with nettles and garlic, wild rose bushes and rowans, with quite a large ash-tree in the middle, while a few

currant and gooseberry bushes and a real white-heart cherry-tree bore testimony to an ancient garden outside.

We used to picnic on the island, and there was only one spot where we could have luncheon free from the stinging, prickly, strong-smelling vegetation. It stood rather out to the loch, on the sunny south side, commanding a splendid view of Ben More.

Here on one occasion about the period indicated, after luncheon, the boys and girls of the party began a stone-throwing competition, and soon

Fig. 3. Earthenware Jug found in the dungeon (6 inches in height).

great blocks began to be flung into the loch. Then I spoke out the wish of my heart for many a day. "Oh, I *do* wish we could clear all these stones away, and see what the castle was really like, and put it right and take an interest in it." As happens when there is a proposal of sport being turned into work, some were willing and others were not; the latter thought they had better go a-fishing—and to fish they went. Well, we who remained and two boatmen set to work, and by the time the fishers returned to tea, what had we to show them? *A dungeon 8 feet deep, quite cleared out!* This was the projecting round tower on which we used to encamp, then a mere heap of stones clear of vegetation.

The dungeon seems strongly built on the solid rock. An iron staple fixed in the wall, and another knocked out by the falling masonry, was suggestive of the poor prisoner, as were the remains of a knife found on the floor, which had been worn into a hollow, possibly by an endeavour to file a chain; also the small pieces of a jug, of coarse ware (fig. 3), which we pieced together.

There were also quantities of bones found, charred beyond recognition of their kind. From the bottom of the dungeon there is a flue 20 inches wide by 12 inches high, which runs along below the east wall of the castle,—a contrivance not unlike what is found in connection with the dungeons at Craigmillar Castle.

After our first day's work, we consulted as to the prosecution of the undertaking, and decided that on such days as could be given up by the votaries of sport, we would take time at the castle and try to see what it had been like—and on *off* days, perhaps four in a season for ten years, we worked at it. We had men who worked splendidly, often kind and enthusiastic visitors, and always a band of busy, sharp-eyed boys and girls looking out for curios. The result of our labours is that whereas we used to climb over heaps of stones, now we walk in through a doorway which had been secured with a sliding bar, and find ourselves in a hall (see fig. 4) 28 feet long by 17 feet wide, with a projecting ingle nook about 9 feet square, having a small window on each side, and one in the centre, thus commanding the whole length of the loch and the glen. There is a round arch at the back, 7 feet 6 inches above the floor, to support an intake of the wall above, shown by a dotted line on the plan. This ingle nook, the hearth of which is paved, probably served as the kitchen. Leading off the hall is a private room, up one step, about 8 feet wide, with a good fireplace and a small window. There are several presses in the walls, all about 3 feet above the floor, except one, a garderobe, with a rounded end, which comes to the floor—it is situated at the door leading to the private room. Near this is a wheel stair in a projecting turret leading to the upper floors. On the south side another wheel stair in a similar turret has led to the

upper rooms at the east end of the house, and to the room in the projecting round tower at the south-east angle. There is no entrance to the prison in this tower on the ground floor, which has been reached by a trap in the floor above, to which the stair gave access, so that it may be supposed to have been a prison. It has a small window or breathing-

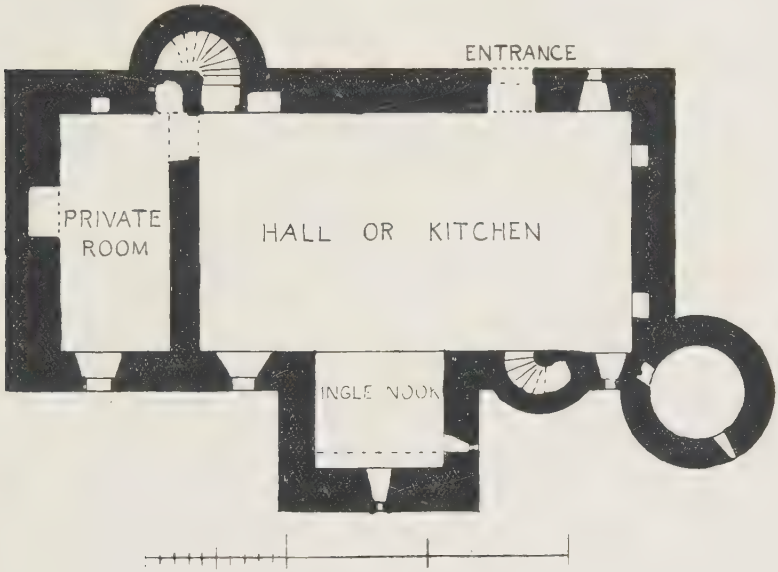



Fig. 4. Ground-plan of the Castle on the Isle of Loch Dochart.
By Thomas Ross, F.S.A. Scot.

hole, with a kind of projecting shoot or sink in the sill. The turret reaches the edge of the rock, which is here precipitous, about 12 feet high, with deep water below. The north and south walls are now about 7 or 8 feet high. The gables are much higher, the east one being almost entire, but up the line of the recess of the windows of the two upper floors it is rent, and the northern half is tottering to its fall, and would have fallen ere this if we had not had it propped with railway rails.

The ingle nook stands nearly its full height, and has been finished as a tower-like, picturesque chimney with several intakes. The ingle nook is a frequent feature in houses after the Reformation, and this is one of the most important.

The house was three storeys high; the upper floor had dormer windows; the tympanum of one, quite entire and of good design, is lying

Fig. 5. Dormer Window and its Tympanum, as it would have appeared in position.

among the ruins, and is shown as it would have appeared in its original position in fig. 5.

This house has been planned as a place of residence rather than of defence—its position on a deep loch being its security. It was meant to be a comfortable, dry, and sanitary abode, and had throughout an excellent timber floor, of which we found the charred remains 2 inches thick; under this a layer of fine sand fully 18 inches deep, which must have been carried thither, there being none on the island. This was a most careful preparation for a timber floor. There were many evidences

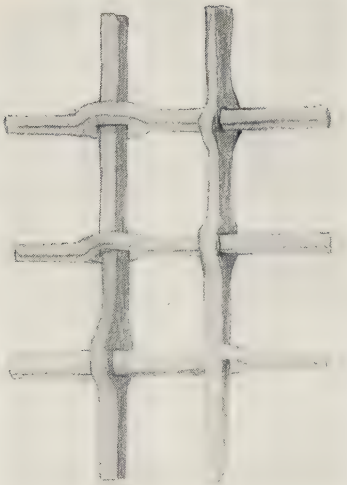


Fig. 6

Fig. 7.

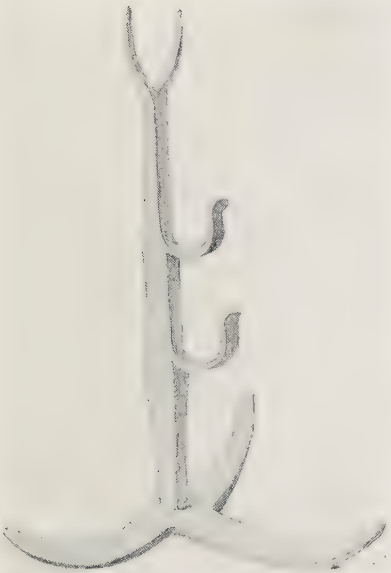


Fig. 8.

Fig. 9.

Interlocked Window-bars, Stirrup, Fire-dog, and Earthenware Jar.

of the place having been destroyed by fire, and in the *Black Book* (p. 100) we are told that in the Civil Wars of the years 1644 and 1645 the Laird of Glenurchy's whole lands were ravaged by the Royalist forces under the Marquis of Montrose, the whole cattle of the tenants taken away, and their "cornes, houses, plenisching and whole insight brunt." It is then added: "Notandum that John M'Nab fiar of Bowane, and Alexander M'Inlay M'Nab in Inschewine, with the whole of Clan Nab joynit with foresaid enemies and took in the y$^{ll}$ of Loch Dochart, quhich y$^{ll}$ of

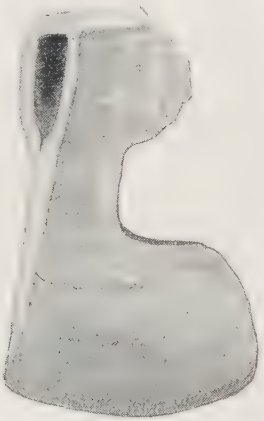


Fig. 10. Axe of Iron.

Loch Dochart was violently taken from them again in Anno 1646, and brunt throw their default." It is evident that after such a conflagration, which fused the roof-slates and reduced the floor to charcoal, little of the plenishing could remain. In the Great Hall beside the entrance we found the great iron lock and key, and at the adjoining window the iron-barred grating shown in fig. 6. In the hall we found several locks and keys, two odd spurs, a stirrup (fig. 7), a salmon spear, part of a bridle-bit, and part of a lock of a flint gun; an iron fire-dog (fig. 8) with a forked top and hooks at the side, an iron saddle-tree, four small horseshoes, a jug like the one found in the dungeon, and another (fig. 9)

9 inches in height but in fragments, which we pieced together; two saws, two axes (fig. 10), and a steel for striking a light with a flint (fig. 11). At the doorway to the private room and garderobe there was

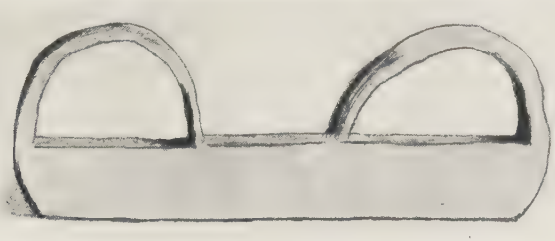


Fig. 11. Steel for striking light with a flint.

a mass of door-plates, some with their nails still in them. Inside the room we found large fragments of a "greybeard," a pair of scissors (fig. 12), and eighty-seven small copper coins of Charles I., known as turners,

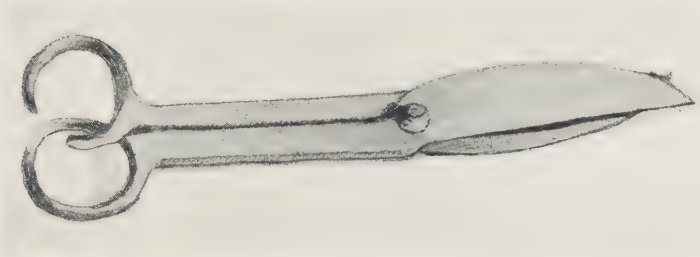


Fig. 12. Pair of Scissors found in the private room.

or Scots twopenny pieces, with the initials, C.H.R. under a crown on the obverse, and the legend round the margin, CAR. D.G. SCOT. ANG. FR. ET. HIB. R., while on the reverse is a thistle head with two leaves and the motto round the margin, NEMO ME IMPVNE LACESSIT; and close among these, fragments of what we believe to have been a brass sporran chain, beautifully worked and chased in a plaited pattern. The coins were

Fig. 13. Pair of Tongs found on the hearthstone.

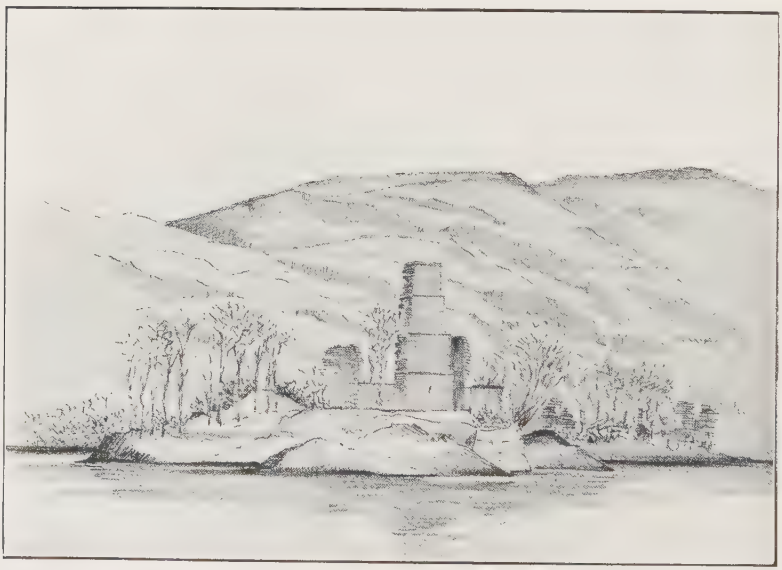


Fig. 14. View of the Castle on the Isle of Loch Dochart, as it now appears.
By Thomas Ross, F.S.A. Scot.

probably in the sporran of one of the last occupants of the castle. An axe lay close by, but an ash-tree had sent such a strong root through it, where the shaft had been burned out, that it was split quite open. On the hearth-stone, as if in peaceful expectation of being picked up to mend the peat fire, lay an ancient pair of tongs shown in fig. 13. These are all the relics we found, and they are now safely stored away.

Throughout the whole of its progress the work of clearing out the ruins was most interesting, and now that it is finished, we have propped up the walls where necessary, and cemented loose stones and cracks, so that the castle on its little wooded island is now a picturesque object of interest and instruction; and I hope that this account may stir up other owners of castles to do their best for their preservation.

## IV.

NOTES ON—(1) A DRINKING-CUP URN, FOUND AT BATHGATE; (2) A PREHISTORIC HUT IN TIREE; (3) A CAIRN CONTAINING SIXTEEN CINERARY URNS, WITH OBJECTS OF VITREOUS PASTE AND OF GOLD, AT STEVENSTON, AYRSHIRE; AND (4) PREHISTORIC BEADS OF COARSE VITREOUS PASTE. By LUDOVIC M'LELLAN MANN, F.S.A. Scot.

### 1. Note on a Drinking-Cup Urn found at Bathgate, Linlithgowshire.

On 22nd March last Mr Arthur Hart, C.A., Glasgow, on the suggestion of Dr David Murray, showed me a fine drinking-cup urn which had been found about 22nd February last in a sand-pit near Bathgate. Soon thereafter I went and examined the place where the vessel had been found, and obtained information of the circumstances in which it was discovered from Mr William Houston, the workman who came upon it in digging sand, and from Mr Joseph Clayton, Manager of the Asbestic Sand Company, for which the sand is being excavated. The

sand-pit is about a mile east of Bathgate, 100 yards south of the North British Railway, and about 50 yards west of the road which leads to Blackburn. The vessel was found lying on its side, about 43 feet below the summit level of the natural bank of sand and gravel; but, as the sloping face of the bank had previously been cut away, no accurate measurements of the actual depth beneath the surface of the slope were

Fig. 1. Drinking-Cup Urn from Bathgate.

obtainable. I was told that the vessel contained nothing but sand, and that the sand above and around it appeared undisturbed, no traces of artificially placed pebbles or bones having been noticed.

The vessel (fig. 1) is an ovoid cup with recurved upper part, measuring $5\frac{5}{8}$ inches in height, and the same in its greatest breadth, $5\frac{1}{2}$ inches across the mouth, and 3 inches in diameter at the base. The decoration has been produced by winding spirally round the exterior of the cup a thin, tightly twisted cord, and impressing it in the soft clay.

The cord has been wound round the vessel so closely as to give eleven or twelve lines surrounding it horizontally in the space of an inch of its vertical height. It has been thus passed thirty-three times round the upper part and twenty-three times round the lower part of the vessel, and three times round the inside of the rim, covering the interior surface to the depth of a quarter of an inch. At the widest part of the exterior is a plain, undecorated band an eighth of an inch in width, separating the upper part from the lower. Midway up the upper part the impressions of the cord have been blurred before the clay was fired, probably by the accidental pressure of the fingers, and here the artist has very neatly continued and imitated the lines of the cord impressions by putting in a series of little notches over the blurred area, using some pointed tool.

In the series of 172 photographs of drinking-cup urns compiled by Mr Abercromby (*P.S.A.S.*, vol. xxxviii. pp. 325–410), the cups bearing horizontal string-markings, and no other decoration, form a compact group.[1] No cups so decorated occur between Nos. 1–59 nor between Nos. 93–172, while fourteen of the cups solely string-marked occur between Nos. 59–93.[2] Some of these fourteen, like the Bathgate vessel, were not, apparently, associated with sepulchral remains.

If this compact grouping be not a mere coincidence, it indicates some connection between the shape and the decoration of these cups, and may throw light on the chronology of this group of prehistoric pottery. It is a fact not hitherto recorded that string-marked "drinking-cups" are not uncommon in the Hebrides and the south-west of Scotland, of which a good many specimens are known to me. The Bathgate cup has been generously presented to the Scottish National Collection by the Governors of Daniel Stewart's Hospital.

[1] The vessel most closely resembling the Bathgate vessel which I have been able to examine is No. 79 in Mr Abercromby's series, and is in the National Scottish Collection (Cat. E G., 39), and is referred to in *P.S.A.S.*, vol. xxxvii. p. 231.

[2] Of the fourteen, some have the markings continuous from rim to base without a break or plain zone. These are Nos. 70, 72, 82, 83, 84, 92, and 93; while a plain or vacant zone occurs on Nos. 59, 67, 69, 73, 77, 79, and (?) 86.

## 2. On the Exploration of the Floor of a Prehistoric Hut in Tiree.

On 15th July 1905, when walking over a sand-blown area between the sea and Loch Bhasapoll, Tiree, I noticed, at a point about 70 yards north from the north-west corner of the loch, a piece of pottery protruding from the soil. On clearing away the drifted sand there was found a hard, compact, dark layer or old surface. This would soon have become exposed by the blowing away of the superincumbent sand. The black layer was about 9 inches deep, covering a circular space about 8 to 9 feet in diameter. It lay upon a deposit of undisturbed pure white drift sand. With two assistants, and using a pocket-knife, the whole of the dark matter was patiently dug over and sifted by hand. There were found fragments of pottery representing at least five different vessels, two perforated discs of stone and eight implements of stone, and other interesting objects, all pointing to the place having once been an occupied site, probably a small circular dwelling.

The circular edge of the site was clearly marked towards the south-west edge, but towards the north-east the black layer or floor thinned out beyond the periphery. Here, probably, was the door. Beyond the site was pure white sand. Many of the implements and pottery fragments were found close to the wall at the edge of the floor. The pottery had been broken in ancient times, as shells adhered to the fractured edges. All the objects were embedded in the dark layer. No trace of a walling remained, but it was quite noticeable where the floor soil had accumulated against it. The walling may have been either portable or easily perishable.

The pottery vessels differ from the mediæval and modern hand-made *craggan* of the Hebrides. Some have raised beadings or mouldings. Pottery with similar mouldings, placed horizontally and in festoons, and notched with the finger tip, has been found in the south of England, in graves of the Bronze Age. In Devizes Museum I recently examined Bronze Age pottery closely resembling some of the vessels from Tiree.

At Ashford, Middlesex, similar vessels associated with Bronze Age burials have been found, and are now in the British Museum. So far as I know, no such pottery has until this occasion been recorded from Scotland.

Some small, formless lumps of unbaked clay were found in the floor, also limpet and cockle shells, claws of crabs, two large univalvular shells with broken or chipped edges, and one half of the valve of a large pecten shell.

Of stone objects there are two small circular discs centrally perforated. At first sight they might be pronounced spinning whorls. The discs were found closely together. Two naturally perforated stones were found near them. Other naturally shaped stones, noticeable by reason of their odd shape or colour, may have been brought into the hut by the hut-dwellers.

Four fragments of flint were found. One, a fire-injured piece, shows the bulb of percussion.

Two polishers of stone and four hammer-stones and some other worked stones were recovered.

A descriptive list of the objects found is given below :—

*Objects of Flint.*—Four pieces of flint were recovered—all chippings without secondary working. One seems to be a very rough core, and another, a small, thin, oval fragment (fire-injured), shows the bulb of percussion.

*Anvil Stone.*—One anvil stone was found, a flattish oval pebble of grey and pink granite, $3\frac{3}{4}$ inches long, $2\frac{5}{8}$ inches broad, and $1\frac{1}{8}$ inch thick, with a portion of the periphery somewhat decayed. Its use as an anvil stone is evident from the presence of a small circular portion of abraded surface on the centre of one of the flat sides.

*Hammer Stones.*—Four of these implements were got, all quartzite, water-worn pebbles, three ovoid and one chisel-shaped. The largest ($4\frac{3}{4}$ inches by $3\frac{1}{2}$ inches by $2\frac{1}{4}$ inches) has its two ends abraded by use. Another, which has a large portion broken away, is worn on two corners, and measures, in its present condition, $4\frac{1}{2}$ by $1\frac{7}{8}$ inches. No other fragment of this stone was noticed.

The third, abraded at one end only, measures $3\frac{1}{4}$ by $2\frac{3}{4}$ by $1\frac{3}{4}$ inches. The fourth is of a less common type, and is a longish, thin, rather chisel-shaped stone. This type seems more frequent in the islands than in the mainland. It is of bluish stone, worn into two facets at one end and abraded slightly at the other, and measures 4 inches by $2\frac{3}{16}$ inches by 1 inch. One of the flat sides is unusually smooth, and may have been employed in some rubbing process.

*Two Discoid Chopper-like Stones.*—Two stones, fragments of oval water-worn pebbles, one of red-grey, the other of grey-blue quartzite, are perhaps worthy of notice. The fragments are not the result of fire splintering the pebbles. Both have been struck off by blows. One is a thick ovate flake 4 inches by $3\frac{1}{4}$ inches by $1\frac{1}{2}$ inch, the original convex surface remaining on one side. The other side is also convex, and has been worked out to that shape by a series of blows. The points of impact of some of the blows can be seen on the edge of the stone. Viewed from the worked side, the stone resembles the ovate implements of the much earlier Palæolithic period. Like them, the stone may have been used as a wedge or as a strong, somewhat blunt-edged chopper. I have found similar implements on other early sites in Scotland.

The other fragment has been struck from the pebble, and the whole of one side retains the original surface. Unlike the stone just described, it bears no secondary working. A single, small, bruised hollow (with corrugations radiating from it) on the edge of the butt or thickest side of the flake indicates the point of impact of the only blow used to produce this implement. The flake is thin, its maximum thickness being $\frac{3}{4}$-inch, and is an almost circular disc, the longer and shorter diameters being $3\frac{5}{8}$ and $3\frac{3}{8}$ inches respectively. The edge opposite the point of impact is thin and presents evidence of use, the flake having probably been used as a knife or thin-edged chopper.

Many similar stones have been found by me in other early domestic sites in Scotland, and always with objects apparently assignable to a period not later than the Bronze Age. No attention seems to have been given so far to these types of implement. The cores or boulders from which the flakes have been struck have also been found. The thin, ground or polished, knife-like discs of stone found in Shetland can scarcely be classed with these.

*Polishers of Stone.*—There was found a water-worn pebble, flat on one side and convex on the other, measuring 3 inches by $2\frac{1}{4}$ inches by $1\frac{1}{16}$ inch, of some dark, compact volcanic stone. A portion of the flat side is so highly polished as to resemble a varnished surface.

Another stone which has been used as a polisher on one side is a flattish, roughly circular pebble $1\frac{5}{16}$ inch thick, with the longest and shortest diameters measuring $3\frac{1}{16}$ and $2\frac{3}{4}$ inches respectively. It is of a rusty brown colour, except on the polished face, which is of a greyish tinge, with black patches. It contains much iron. The unpolished face bears many artificial scratchings done as if by a sharp-pointed object. The polished side has also been similarly operated upon before it was used for polishing, as the ends of the scratchings can still be seen on the unpolished edges of that face. That this pebble of ironstone has been used to produce fire by the drawing along its surface of a flint flake is possible; but I have not experimented with the stone.

*A Large Hammer-like Stone.*—A squarish block of quartzite about 12 inches in height, and weighing about 18 lbs., was left on the site. Its weight made its removal difficult. One side is much, though not roughly, battered away. It is too awkwardly shaped and too heavy to have been manipulated in one hand, and, on testing its weight and capabilities, I concluded it had not been used anvil-wise, but that the prehistoric worker had grasped it, using two hands (one hand at each of the two sides), raised the block about a foot or eighteen inches, and then allowed it to fall upon the material to be crushed or broken. Massive drop-hammer-like implements of stone are referred to by Professor W.

Gowland in *Archæologia*, vol. lviii. p. 70; and large grooved mauls of stone by Sir John Evans (*Anc. Stone Imp.*, 2nd edition, pp. 233–235).

*Two Artificially Perforated Discs of Stone.*—Two worked perforated discs of hard grey sandstone were found $2\frac{1}{2}$ feet inside from the south-east edge, both in the same handful of sand, and very near two stones immediately to be noticed, a perforated flint and a small discoid green and white stone.

One of the discs, larger than its companion, is roughly oval, the longer and shorter axes (which pass through the centre of the perforation) being $2\frac{5}{8}$ and $2\frac{1}{4}$ inches respectively. It is flat on one side and roughly convex on the other. At the perforation the thickness is $\frac{1}{2}$-inch, but the maximum thickness is $\frac{1}{16}$ inch greater. The perforation is uneven (possibly owing to the rubbing of a cord or the crumbling of some of the sandstone), being somewhat oval, measuring $\frac{2}{8} \times \frac{3}{8}$ inch, with irregular sides, and not centrally placed. Taking the middle of the perforation as the centre, the longest and shortest radii to the periphery of the disc measure $1\frac{1}{2}$ inch and 1 inch respectively. Neither the shape of the disc nor the appearance and position of the perforation point to the stone having been a spindle whorl.[1]

The other disc is $\frac{5}{8}$ inch thick, of somewhat harder sandstone; the faces are rather flat and parallel, and both bear distinct signs of having been subjected to some rubbing. Compared with its companion disc, it is smaller, with a more regular but still quite unsymmetrical contour, and the perforation is more centrally placed and is circular, with fairly regularly made walls. The longest and shortest radii, reckoned as in the other case, are 1 inch and $\frac{3}{4}$ inch respectively. The improbability of its companion disc having been a spindle whorl is some evidence against the smaller disc having been so used.

*Noticeable Naturally-Shaped Stones.*—The other perforated stone, mentioned as found very near the two discs, is like them in size and appearance. At first sight one might fancy it is a centrally perforated disc with a portion of one side broken away into the perforation; but the stone is, however, natural, apparently water-worn, with natural pittings which in three places extend to produce irregular canals from one surface to the other.

Near the three stones just mentioned was got a naturally-shaped, rounded, water-worn discoid pebble $1\frac{1}{8}$ inch in diameter by $\frac{5}{8}$ inch thick, of rather soft dark blue stone. A vein of white quartz runs horizontally through the disc and is exposed symmetrically all round the periphery, rendering this little stone a most conspicuous object.

Of similar size and shape is a smooth pebble of marble, delicately mottled over the entire surface with blotches of light brown and light green, with a few thin lines of reddish brown. The surface of each of the flat sides is so smooth as to suggest that some artificial polishing has been done.

A third naturally-shaped stone is a piece of brownish grey metamorphic sandstone, about $2\frac{3}{4}$ by $1\frac{3}{4}$ by $3\frac{3}{8}$ inches, broken from a larger stone. It bears many small pittings, and also three large pittings (apparently produced by a boring mollusc) which give the stone, if viewed from one side, a marked likeness to the frontal part of a human skull with its eye-sockets and nasal

[1] I know of no discovery in Scotland of spindle-whorls of the Bronze Period or any earlier period; but they have been found in England on sites occupied a century or two before the Roman invasion.

cavity. The peculiar features of these stones may have caused them to be picked up and brought into the hut.

*Two Univalvular Shells* (*Buccinum undatum*), originally about $3\frac{1}{2}$ and $4\frac{1}{4}$ inches long respectively, were found. No fragments derived from these two shells (and no fragments of other similar shells) were encountered. In each case a small part of the apex, or tip of the spire, has been either worn or knocked away; and the mouth, and part of the sides adjoining, have also been chipped away, the chipping being particularly distinct in the larger specimen. The pillar or central column supporting the volutions is also partly broken away. These chippings have so exposed the interior as to render the shells serviceable as cups.[1] Shells were used as spoons and cups until recently in Scotland and in the Isle of Man[2]; but this is, apparently, the first

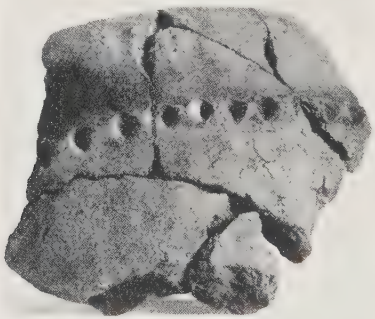


Fig. 2. Fragment of Upper Part of Bucket-shaped Pottery Vessel (Tiree).

instance which suggests the employment of shells for domestic purposes in Scotland in prehistoric times.[3]

[1] Somewhat similar shells (*Turbinella pyrum*) are used in India, Ceylon, and the Philippines to administer food to infants and invalids, and to hold oil in sacred rites.

[2] The Manx "sligs" were shells used as broth spoons. I have referred to them in notes on Manx neo-archaic objects in the *Isle of Man Examiner* of 29th Oct. 1904.

[3] While shells as ornaments and implements are in frequent use among modern primitive peoples, the employment of shells in prehistoric times was not apparently so very common as might have been expected. There have been noted a perforated cowry shell in a Dorset Bronze Age burial (*Arch.*, xxx. p. 330), others with a Yorkshire Anglo-Saxon burial (*Forty Years' Researches*, p. 292), a limpet shell with a Yorkshire Early Iron Age burial (*op. cit.*, p. 250), and a similar shell "with marks of grinding on the upper surface," with a burial of Viking times in Colonsay (*P.S.A.S.*, vol. xxv. p. 433). Wiltshire barrows have yielded a barrel-shaped bead of shell (*Arch.*, lii. p. 57), and a necklace of pierced *dentalium* shells (*Anc. Wilts.*, i. 114).

*Pecten Shell.*—The half of one valve of a large clam shell (*Pecten maximus*), 5½ inches long, was found. No other part of this shell (or of other similar shells) was noticed. The valve has been split nearly down the middle, from the centre of the fan to the centre of the hinge. It was found at the south-west corner of the hut, lying with the concave side downwards, on the top of and touching the large hammer-stone described on page 373, both objects having apparently been deposited carefully against the hut wall. This large shell may have been used for slicing or some such work. Portions of similar shells were used recently in Scotland for skimming milk, and, being thick and strong, lasted well.[1]

*Other Objects.*—Many limpet shells, a few cockle shells, and several claws of small crustaceæ, probably crabs, and one small indeterminable piece of bone, were found.

*Pottery Fragments.*—The pottery obtained is fragmentary, and represents five different vessels, all hand-made ware, characteristically prehistoric in colour and fabric, and different from the mediæval and modern "craggan."

One vessel is represented by a handle or lug only.

One set of fragments (fig. 2) belongs to a bucket-shaped vessel which measured about 8 and 5 inches across the mouth and base respectively, and about 12 in height. A horizontal moulding ran round the vessel at its broadest point, 2¾ inches from the rim. The moulding was deeply notched at regular intervals of about ½ an inch by the finger tip and nail edge (which often has left an impression), always at right angles to the line of the moulding.

Another set of fragments belongs to a similar vessel, but a similarly notched moulding is arranged in festoons. This style of notched mouldings has not until now apparently been recorded from Scotland.[2]

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Mr W. J. Knowles recently showed in Belfast fragments of *Lutraria elliptica* from Donegal, anciently worn down apparently by use as scrapers and knives. The Cro-magnon cave yielded a string of periwinkles (*Littorina littorea*), now in the British Museum, and other shells worked in prehistoric times have been found at Zurich (*Mitth. d. Ant. Ges. in Zürich*, i., 3. Heft, S. 31), and at Hedingen (*Alterth. d. Hohenzollern Samml.*, Taf. iv. 8, v. 24).

[1] I am told by a person familiar with such skimmers that so long did individual specimens remain in use that the corrugations became quite worn down. In historic times the "Slige-chreachainn" was used in the Hebrides for drinking purposes (Macfarlane's *Gaelic Vocabulary*, 1815, p. 119). Pecten valves were found in the MacKay Cave, Oban, inhabited at a remote period; half of a valve was found at Fimber with a Bronze Age burial (*Forty Years' Researches*, p. 190, fig. 480); a valve pierced artificially at the hinge was got with relics of the French Reindeer period (*Le Maconnais Préhistorique*, 1870, pl. xxx. and p. 134); and one valve each of *Pecten opercularis* and *P. septemradiatus*, both similarly pierced, were found in the terramare (Coppi's *Terramara di Gorzano*, 1871, Tav. lxiv.).

[2] It is, however, common in the south of England. Specimens may be seen in the Farnham Museum, and several are figured in Warne's *Celtic Tumuli of Dorset*. Many bucket-shaped vessels with notched horizontal mouldings were found in a cemetery (supposed to be of the Bronze Age) at Ashford, Middlesex, and are preserved in the British Museum (*Proc. Brit. Arch. Assoc.*, vol. xxvii. p. 449), where also may be seen pottery somewhat similar from Bloxworth Down, Dorset (Durden Coll.); Milborne, Dorset; Littleston Down, Dorset (Durden Coll. *Cat.*, p. 18, No. 18); Roke

A fragment of a fourth vessel, differing in texture and thickness, is undecorated.

A fragment representing a fifth vessel is a small piece of the rim, slightly everted, and indicating a diameter at the mouth of about six inches. Under the rim the decoration consists of a series of vertical lines about a quarter of an inch apart, produced by drawing the frayed end of a twig downwards in the soft clay. The lines all begin evenly at a depth of about half an inch beneath the brim, and their channels show distinctly the striation of the frayed ends.

## 3. Discovery of a Cairn containing Sixteen Urns at Ardeer, Stevenston, Ayrshire.

A discovery of a cairn and within it at least sixteen cinerary urns, some recovered in a fragmentary condition, was made in February 1906 by Mr John M. Orr and Mr David Bryden of Saltcoats and Mr Robert Irvine of Stevenston, who noticed boulders cropping out at a point about 66 feet distant from, and 5 feet in height above, the western base of a hill of drifting sand at Ardeer, Stevenston, Ayrshire. The place is near the Misk Knowes, within a roughly triangular area bounded by the river Garnock, the sea, and the Caledonian Railway line, and is rather south of the middle of the hill. From the site of the cairn to the centre of the railway line measures 1545 feet, and from there along the railway

Down, Dorset (Durden Coll. *Cat.*, pp. 12, 14, Nos. 2 and 8); Barrow, Bere Regis Down, Dorset; Barrow, Nether Swell, Gloucestershire (Greenwell Coll., *Brit. Barr.*, ccxvi.); Millhill Park, Acton, Middlesex; Jersey; Nussdorf in Switzerland; Klein Rossen, Merseburg, Saxony (Klemm Coll.).

The Bronze Age barrows in Wiltshire, Berkshire, and Dorset have also enriched the museum at Devizes with ware of the same class, including the famous Stonehenge bucket-shaped urn bearing three horizontal mouldings notched with the finger-tip (*Anc. Wilts.*, p. 126, pl. xvi.).

Another urn (263 in Mus. *Cat.*, and figured and described in *Anc. Wilts.*, p. 119, and pl. xvi.), from Stonehenge, has mouldings notched at the usual short intervals by the impression of the finger-tip. Certain barrows at Collingbourne Ducis, Wiltshire, escaped Sir Richard Colt Hoare's scrutiny, but were partly explored in 1861 by the Rev. W. C. Lukis, and are described by him in the *Wiltshire Archl. and Nat. Hist. Mag.*, vol. x., No. xxviii., pp. 85–103.

Some of the pottery from the Collingbourne Ducis barrows is remarkably similar to, and some is identical with, the Tiree hut pottery. The ware is not described in detail by Mr Lukis, but the fragments from Barrow No. 3 are in no manner different from the Tiree ware with notched and festooned mouldings; while the vessel from Barrow No. 6 is identical with the Tiree ware with horizontal notched mouldings.

north-eastwards to a railway bridge, giving access to Bog farm, measures 2211 feet, the measured lines containing a right angle.[1]

On clearing away some of the sand, a small oval cairn about 15 feet long by 10 feet wide was exposed, composed of about eighty water-rolled boulders all about the same size and portable by one man, except one boulder which would require two men to carry it. The cairn has been built over a nearly horizontal ancient land surface forming a dark layer about 3 inches deep. Under this old surface was a deposit of pure drift sand. The cairn rose to a height of 3 feet in the centre. The surface of the cairn was coated with a layer of dark soil about 3 or 4 inches deep. It is not easy to say when the cairn became submerged in the blown sand; but as the surrounding old surface about 30 yards to the south-south-west was not submerged in mediæval times, but was then occupied (as is clear from the presence there, in the layer of old surface, of mediæval relics such as iron slag, an iron arrow-point, and fragments of green glazed pottery), this little shallow cairn at that time was probably still unhidden by the sand drift.[2]

### 1. *The Pottery.*

Many of the urns broke to pieces on drying, and they were all in a fragile condition, probably because of the nature of the clay or its manipulation or firing.[3] Pounded stone has been mixed with the clay.

[1] It was on the invitation of Mr John Smith (author of *Prehistoric Man in Ayrshire*) that I joined him in a visit to the site. At a subsequent visit there were present the three discoverers, also Mr Smith, Mr A. Shanks of Dalry, Mr D. A. Boyd of Seamill, and Dr Lambie. Mr P. MacGregor Chalmers, I.A., F.S.A. Scot., also made an examination of the place. These gentlemen have kindly read the proof-sheets of this account and made valuable suggestions. The discovery was referred to by Mr Orr in the *Ardrossan and Saltcoats Herald* of 23rd March 1906, and by Mr Smith in the same journal of 13th April following, and in the *Irvine and Fullarton Times* of seven days later.

[2] The sandhill, according to Mr John Smith's observations, which extend back to 1871, is moving at the rate of 10 feet yearly towards the north-east, in the direction of the most frequent winds.

[3] Though carefully extracted and handled, most of the urns looked hopelessly fractured, but Mr Orr has repaired Nos. 9, 14, and 15, which were discovered by him

The urns are all hand-made, flat-based, comparatively small (varying from 5 to $11\frac{1}{16}$ inches in height), and are bucket-shaped, without overhanging rim. Some bear the unusual pattern of looped and wavy lines, and some were closed by covers of unbaked or half-baked clay, a rare

Fig. 1. Urn No. 1, $11\frac{1}{16}$ inches in height.

feature. On one vessel have been impressed twisted cords of different thicknesses, and the potter has left accidentally finger-prints on three

and Mr Bryden. Mr Irvine, to whom is due the credit of recovering Nos. 1 to 8, sanctioned my reconstructing his urns and acquiring them, with their clay covers, beads, and other contents; and these relics are now presented to the National Scottish Collection.

vessels. Many small white pebbles were noticed. Their association has often before been recorded with prehistoric burials.

In describing the urns they will be numbered according to the order in which I first examined them.

*Urn No. 1* (fig. 1), found inverted, is bucket-shaped and $11\frac{1}{16}$ inches high. Across the mouth, which is slightly oval, the least and greatest outer diameters are $8\frac{7}{8}$ and $9\frac{1}{2}$ inches respectively. The base has a diameter of $4\frac{1}{2}$ inches. The rim is squarish and plain. A horizontal moulding, very slight and somewhat broad, runs round the vessel at a point $3\frac{1}{4}$ inches below the rim. The contour line, which runs slightly outwards from the base, changes at the point where the moulding occurs, and thereafter runs vertically upwards. The decoration consists of impressions made in the clay while unfired of a twisted cord, about $\frac{1}{8}$-inch thick, of at least six strands of what was probably coarse hair, judging from the sharpness of the imprints of the component filaments. A horizontal line is impressed at a point $\frac{1}{4}$-inch below the rim, another from $\frac{1}{2}$ to $\frac{3}{4}$-inch below, and a third from $1\frac{3}{4}$ to 2 inches below the rim.

The zone of varying depth contained by the two last lines is filled with an uncommon style of decoration, partly consisting of obliquely placed loops. There are also sets of lines (the component lines of each set being parallel) placed in one or other of the two directions possible at the angle of 45°. The pattern, following it round the vessel, consists of, first a set of three lines, then another of three, then one of four, then another of four, each set being placed zigzag-like in the direction opposing that of the neighbouring set. This is followed by a plain interspace, then by a set of three lines coinciding in direction with the last mentioned. Then comes another interspace and another set of three lines parallel to the last. Then, without interspace, follows a set of three lines running in the opposite direction to the last mentioned, and again another set of three placed in the reverse direction. Partly overlapping the last, and lying at the same angle, is a loop like the letter U reversed. After a short interspace occurs a similarly placed loop, crossed by a line

giving it the appearance of the letter A. Then follows, both placed at the same degree of obliquity as the immediately preceding figures, a set of three lines and then a third loop, which finishes the circuit of the vessel.

Fig. 2. Urn No. 2, $10\frac{1}{2}$ inches in height.

*Urn No. 2* (fig. 2) is of similar contour, $10\frac{1}{2}$ inches high, $8\frac{3}{4}$ inches and $3\frac{1}{2}$ to 4 inches across the mouth and base respectively. The exterior surface of the base has a slight, probably accidental, convexity. The urn was found upright, and like all the others contained burnt bones;

but in this case they were sealed by a layer or plugging, 1 to 2 inches thick, of soft, light brown, unbaked or half-baked clay, without admixture of pounded material. The top surface of the plugging was $2\frac{1}{2}$ inches below the rim. Particles of the clay still adhere to the walls.[1] There is a wide

Fig. 3. Urn No. 3, 9 inches in height.

I know of no other cases of urns found sealed with covers of soft clay; but in 1837, in an Ayrshire grave-mound were discovered burned bones packed round with clay, and an urn (containing burned bones) protected by flat stones and a packing of clay. (Smith's *Prehistoric Man in Ayrshire*, p. 149.) Mr Mortimer found in the Yorkshire grave-mounds that clay, frequently brought from a distance, had often been used to cover graves and to build the mound, and in one case (p. 156) to cover the urn and its cavity; and he quotes from page 60 of Worsnop's *The Aborigines of Australia*, that the aborigines covered the grave-mound with a layer of clay. (*Forty*

crack running up one side of the vessel, but at what time this distortion took place is uncertain. The rim is steeply bevelled inwards, with a single, centrally placed line made by the impression of a twisted cord. An irregular, very slight double moulding, 1 inch in breadth, occurs 4 inches

Fig. 4. Urn No. 4, 9¼ inches in height.

below the rim. At this point the contour changes slightly, as in the case of Urn No. 1. The decoration is confined to the upper part, and has been effected by a twisted cord of what appears to have been animal fibres, probably hair. The cord applied to the wall has become loosened

*Years' Researches*, p. xl.) A small cup, "the mouth of which was stopped with a lump of half-baked clay," was found inside a large urn in a grave-mound in Kent (*Arch.*, vol. xlx. p. 53). In the mound were found beads of vitreous paste like the Stevenston beads.

at times, and has been at least of five strands, and is thicker than the cord which has been applied to the bevelled rim. A horizontal line occurs $\frac{1}{2}$-inch and another $3\frac{1}{2}$ inches below the rim. Between these lines (and after they have been impressed) there has been placed a series of oblique lines crossing each other, forming a very irregular zigzag pattern.

*Urn No. 3* (fig. 3) is devoid of decoration or moulding, is bucket-shaped, rather squat, 9 inches high, and measures 8 and 5 inches across the mouth and base respectively. The rim is rounded and plain. The wall at one side bulges unsymmetrically. No plugging or lid was observed. It stood upright.

The bones from Nos. 1 to 3 (and those from Urn No. 6) were emptied together in a heap on the site, but some are preserved.

Dr Thomas H. Bryce has kindly examined some parcels of bones taken from the site. He reports that "the fragments have all the typical characters of human bones deposited in urns after cremation."

Dr Bryce reports upon the bones from Urns 1, 2, 3, and 6 as follows:— "All recognisable and distinctive fragments must have belonged to skeletons of adult persons, but some are of relatively more slender proportions, so that it is possible one of the individuals was a female."

Four white quartz pebbles, each about $\frac{1}{2}$-inch in diameter, were found with the bones from these four urns.

*Urn No. 4* (fig. 4) is plain like No. 3. It has a rather squarish rim, is $9\frac{1}{4}$ inches in height, $8\frac{1}{4}$ inches in width at the mouth, and 4 inches in diameter at the base. One side bulges somewhat unsymmetrically. No lid was observed. It stood upright. Hard, sooty matter to an unusually large extent adhered firmly to the lower part of the interior. Among the bones within this urn were fifteen white quartz pebbles, the smallest about $\frac{1}{8}$-inch and the largest about $\frac{3}{4}$-inch in greatest dimension. Regarding the bones found within this urn, Dr Bryce reports: "The deposit from Urn No. 4 is a relatively small one. Many of the fragments are more charred than usual, the surface being grey or black, and the fracture black throughout. There is a good deal of charcoal dust among the

*débris*, and also several pieces of charred wood. The individual must have been of adult age."

*Urn No. 5* (fig. 5), the smallest vessel, 5 inches in height and $4\frac{3}{4}$ and 3 inches across mouth and base respectively, was found lying at an angle, mouth upwards. No cover was observed.

The urn is bucket-shaped. At a point 2 inches below the rim the

Fig. 5. Urn No. 5, 5 inches in height.

contour line betrays an almost imperceptible change. There is no moulding, but the upper part has two horizontal lines $1\frac{1}{4}$ inches apart of cord impressions. Placed within these lines are sets of two and three parallel oblique lines somewhat like those in Urn No. 1, but the cord has been thin and of soft material. The rim is slightly bevelled inwards, and decorated by a centrally placed line made by a twisted cord. The lines have been blurred and smoothed by pressure and handling before the firing was done. Part of the top of the urn is broken away.

The bones found within this urn, in the opinion of Mr Smith and Dr Lambie, who saw them soon after their discovery, were very slender, and were those of a young person; but are not now apparently available for examination.

Within the urn were two small white quartz pebbles each about $\frac{1}{4}$ of an inch in diameter, traces of thin gold leaf of indeterminable character,[1]

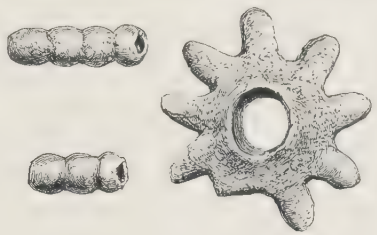

Fig. 6. Three Beads found within Urn No. 5.

and (fig. 6) three objects of known types, all of the same shade of grey, made of a vitreous paste. Of these, two are slender cylindrical notched

[1] "A piece of gold lace" was found with a body within a barrow in Dorset (the Chronicle of the *Annual Register* of 12th March 1767, quoted in *Forty Years' Researches*, p. xxvii). In grave-mounds of the Bronze Age in the South of England have been found pieces of thin gold leaf or plating, which were not soldered, but were joined by being lapped over at the edges to cover "buttons," "boxes," bosses, drums, plates, and conical cores of lignite and other material (*Arch.*, xv. pl. ii. and vii.; xliii. 527; and *Ancient Wiltshire*, 44, pl. ii.; 99, pl. x.; 201 and 202, pl. xxv.; and 204, pl. xxvi. and xxvii.). In Orkney, four, and near Broughty Ferry, two, very thin gold discoid platings were found within cists, and closely associated with Bronze Age burials (*Proc. Soc. Ant. Scot.*, vol. iii. p. 183; and vol. xxi. p. 322).

Dr Anderson has described seven other instances where gold objects (all less delicate than the Orkney objects, being of solid gold) were found in apparent association with early burials in Scotland (*Scotland in Pagan Times*, The Bronze Age, pp. 62–68); and in one instance (p. 61, fig. 68) five penannular rings of solid gold were, it was stated, found within an urn which closely resembles the undecorated urns from Stevenston. Gold has been very rarely found with Yorkshire Bronze Age burials; but Lord Londesborough obtained a wrist-guard decorated with gold (*Forty Years' Researches*, p. 274). In the South of England, in a grave-mound where beads like the Stevenston beads were found, there were discovered a pair of gold earrings (*Anc. Wilts.*, 204).

Fig. 7. Urn No. 6, 9⅜ inches in height.

Fig. 8. Urn No 7, 9 inches in height.

beads, one notched into four and the other into three segments or bulbs, and the third a star-shaped bead of nine points, one of which has been broken in ancient times. The subject of these paste objects is discussed at the end of this note.

*Urn No. 6* (fig. 7) is a tall, elegant, bucket-shaped vessel, quite plain, with slightly swelling sides, not unlike in shape the grave pottery of pre-Dynastic Egypt. Its dimensions—height, breadth at mouth, and base—are respectively $9\frac{3}{8}$, $6\frac{3}{4}$, and $4\frac{1}{4}$ inches. The rim is squarish. The lower part is unusually thick-walled, but the upper part has walls about $\frac{1}{2}$-inch thick, which is about the thickness of the walls of all the urns from this site. It was found deposited upright. No lid was observed. The bones from this urn are referred to in the note on Urn No. 3.

*Urn No. 7* (fig. 8).—The rim of this urn is wanting. The height of the surviving part is 9 inches. The original height was probably 10 inches. The diameter at the mouth was about $7\frac{3}{4}$ inches. The base measures $5\frac{1}{4}$ inches across. A slight moulding occurs a short distance below the rim, and at this point the contour line changes slightly. The decoration has been done by the impression of a twisted cord applied irregularly and sparingly over the upper zone in zigzag fashion. With the bones in this urn was found a single, roughly oval, white quartz pebble $1\frac{3}{4}$ inches by 1 inch by 1 inch. The stone is stained dark red over parts of its surface. No lid was noticed. Dr Bryce reports: "The bones from Urn No. 7 are specially numerous, but they represent the skeleton of only one adult person. The fragments are white and chalky, and completely incinerated."

*Urn No. 8* (fig. 9) is plain, bucket-shaped, and very squat, being only $6\frac{1}{2}$ to 7 inches in height. When set on a flat surface it leans a little to one side. The outside diameter at the mouth is from $7\frac{1}{8}$ to $7\frac{1}{4}$ inches. The base has a diameter of $4\frac{1}{8}$ inches. This is one of the few urns which on their drying did not fall to pieces and require reconstruction. The rim is square, with a slight inward bevel. There were three small white quartz pebbles within the urn. The bones and pebbles were sealed up by a plugging of clay similar to that of urn No. 2. The urn was found

upright. Dr Bryce reports that the deposit of bones received by him from this urn "is a small one and cannot represent the remains of a complete skeleton. The individual was an adult, probably male."

*Urn No. 9* (fig. 10).—This urn is stated to have been found upright. The bones are not preserved. A good part of the base is wanting. The

Fig. 9. Urn No. 8, $6\frac{1}{2}$ to 7 inches in height.

urn is of the usual bucket-shaped type. The mouth measures $8\frac{1}{2}$ inches across, and at a depth of $7\frac{3}{4}$ inches below the rim the diameter is 7 inches. The height when the urn was complete was about 9 inches. The rim is rounded and plain, but 1 inch down, in the interior, is a slight moulding. It is not known whether there was a clay cover.

On the exterior of the upper part is a panel of roughly incised cross-hatched lines made by a rather broad-pointed tool. The panel is bounded

by two incised horizontal lines, the upper line being placed about 1 inch, and the lower about 2 inches, below the rim. The impression of a finger-tip with skin corrugations occurs 4 inches below the rim on the exterior.

*Urn No. 10* is fragmentary. The rim was rather steeply bevelled inwards. A thickish cord of twisted strand, probably of hair, was impressed in a horizontal line $\frac{1}{2}$-inch below the rim, and in another

Fig. 10. Urn No. 9, $8\frac{1}{2}$ inches diameter.

similar line 1 inch lower. A slight moulding occurred $2\frac{1}{2}$ inches further down. Between the lower line and the moulding was a series of obliquely placed lines of impressed cord markings. There was no interior decoration.

*Urn No. 11* is also fragmentary. It was impressed with a similar cord both on the exterior and interior of the upper part. On the exterior were two horizontal lines. One $\frac{1}{2}$-inch and the other $1\frac{1}{2}$ inches below the

rim formed the boundaries of a zone completely filled by a line which ran in loops or festoons. Immediately beneath the zone was a slight moulding. The rim was steeply bevelled. Inside the vessel was a horizontal line $\frac{1}{4}$-inch below the rim and another 1 inch lower. The

Fig. 11. Urn No. 14, 9 inches in height.

latter had running upwards from it at intervals of $\frac{3}{4}$ of an inch short oblique lines about $\frac{1}{2}$-inch long with free ends.

*Urn No. 12* is also fragmentary, and was decorated by the same style of cord. It had a squarish rim. Running horizontally was a line $\frac{1}{2}$-inch and another 2 inches below the rim. Between these was a symmetrical wavy line filling the zone.

*Urn No. 13* is likewise represented by fragments. The decoration was of the same character as that of No. 12, but the two horizontal lines enclose a row of figures each like the letter U placed normally. The rim was flattish and square, and near the rim the wall, unlike that of No. 12, curved slightly inwards.

Fig. 12. Urn No. 15, $9\frac{3}{4}$ inches in height.

Many fragments of the last four mentioned urns are being kept as "curiosities" by various people.

*Urn No. 14* (fig. 11) was found upright with a cover of soft clay like those of Nos. 2, 8, and 15. It is rather elegant, and bucket-shaped. It measures 9 inches in height, and varies in width across the mouth from $6\frac{7}{8}$ to 7 inches. The base measures $3\frac{1}{2}$ inches in diameter. Neither

cover nor bones are preserved. A very slight moulding occurs at a point $1\frac{1}{2}$ inches, and another similar at $3\frac{1}{2}$ inches, below the rim. Coinciding with the upper moulding is a single, incised horizontal line. The rim is squarish, inwardly bevelled, and ornamented with a centrally placed incised line. On the exterior, 1 inch below the rim, is a slight concavity made by the impression of the ball of the finger-tip before the clay was fired. The imprint of the corrugations of the skin is preserved clearly.

*Urn No. 15* (fig. 12) was found inverted and was the first taken out of the cairn, and is bucket-shaped with oval mouth, the least and greatest diameters of which measure $7\frac{1}{2}$ and $8\frac{1}{4}$ inches respectively. The base is lost. The height of the surviving part is $9\frac{3}{4}$ inches. The vessel, when perfect, stood about $10\frac{1}{2}$ inches high, and has had a base about 5 inches wide. The rim is rounded and plain. Immediately outside under the rim is a horizontal string-marked line, and $2\frac{3}{4}$ inches down from the rim another similar line. The space enclosed by these lines is filled with similar string-marked lines disposed in an irregular zigzag pattern of sets of parallel lines somewhat like those on Urn No. 1. The cord used has been of hair probably. The bones in this urn were sealed by a clay cover or plugging like those already noticed. Found embedded in the centre of the cover were about six small white quartz pebbles and a reddish quartz pebble about the size of a hen's egg. Dr Bryce reports that the deposit of bones from this urn is small, and that "it includes a number of complete phalanges and the ends of some of the long bones. These indicate that the individual was of adult age, and, as they are specially slender, probably a female."

*Urn No. 16* is represented by fragments. The decorative lines are incised. A horizontal line ran $\frac{1}{2}$-inch down from the rim. This was the upper boundary of a zone of incised zigzag pattern.

*Urn No. 17.* –Mr James Fulton, Saltcoats, has shown me a fragment of the rim of an urn taken from the cairn which may represent a seventeenth vessel. The rim is steeply bevelled, and has centrally placed on it an incised line.

One half-inch below the rim a similar line has been etched, and again 1 inch below is another similar line.

*Deposit No. 18.*—There was found compactly placed in a neatly made cavity, without traces of an urn but with a cover of soft clay, a deposit of burned bones which, Dr Bryce reports, include fragments of charcoal, and represents the remains of an adult person.

*The Disposition of the Urns.*—I did not see the site until after it had been dug over. It appears that some of the urns were closely packed round with stones, and many had a layer of white quartz pebbles over, and some a layer under them.

The disposition of the various burials and the exact dimensions of the cairn were difficult to ascertain, owing to the encumbrance of drift-sand. The longer axis of the cairn lay about north and south.

The urns seem to have been in groups. One group near the north-east side of the cairn was found by Mr Orr and Mr Bryden. Another was placed at or near the centre, and comprised the burial without an urn and urns Nos. 4, 5, and 8. Horizontally placed an inch or two above these urns was a slab of sandstone which measured 2 feet 3 inches by 10 inches by 4 inches. These burials were thus closely together, and were all above the old land-surface on which the cairn had been laid. A line through No. 5 (which urn lay slanting, probably because of the pressure of the slab) and the urnless burial ran about north and south, and urn No. 8 lay a little to the east.

A group to the south comprised urns Nos. 1, 2, 3, and 6. No. 3 was sunk 2 or 3 inches into the old surface. Nos. 2 and 6 were placed higher, and No. 1 still higher. Nos. 1 and 2 were about 4 inches distant from each other. No. 1 was about 6 inches from No. 3, and about 15 inches from No. 6. The upper part of the inverted urn No. 14 was about 6 inches under the surface of the cairn.

*Worked Objects of Stone.*—Mr Smith found in the soil of the cairn an oval water-rolled pebble of dark green stone, 3 by $1\frac{3}{4}$ inches, artificially smoothed on one of the longer sides, showing that it had been used

as a polishing stone. It is impossible to ascertain whether this stone had been deposited within an urn. Mr Irvine found a flattish, ovoid, water-rolled pebble, $5\frac{1}{2}$ inches by $3\frac{1}{4}$ inches by 2 inches, which had been used as a hammer-stone and was abraded in two facets at one end, and in one small facet at the other end.

One of the stones of the cairn is a large-grained, whitish, flattish, irregularly-shaped boulder of sandstone, uniformly $5\frac{1}{2}$ inches thick, but with a maximum breadth in the middle of 11 inches. At each end the breadth is respectively 6 and 8 inches. On one of the flat sides are slight traces of fine artificial pitting. The other face has been used over its whole area as a surface upon which to polish objects, and a small central portion of the face, about $4\frac{1}{2}$ inches square, is finely and uniformly punctulated to a depth of $\frac{1}{8}$ of an inch. A splinter has anciently been struck from one corner of the boulder.

### 4. Prehistoric Beads of Coarse Vitreous Paste.

The subject of British prehistoric beads has received little attention. The following note is an attempt to marshal the main facts regarding the interesting class of bead-like objects, of which three specimens were found in one of the Stevenston urns.

Of the beads and pendant personal ornaments of coarse vitreous paste and of fine-surfaced glass assignable to the Bronze Age and discovered in the British Islands, those of paste are less rare and are probably earlier than those of glass. Of these objects of vitreous paste about 150 are known to have been discovered. They seem to be the earliest non-metallic personal ornaments of artificial prepared material known in these islands.[1] They are opaque, seldom grey in colour (like the Stevenston beads), but are usually of some shade of blue or green. They have not been found with inhumed burials, but with cremated urn-burials. The associated urns are nearly always of the cylindrical, bucket-shaped or barrel-shaped class, having (as in the Stevenston urns) a contour line with little or no change

[1] Not improbably their chronological position is towards the beginning of the first millennium before Christ.

between the upper and lower parts, and are seldom of the class of narrow-based flowerpot-like vessels with pronounced overhanging rim. The two classes of pottery seem, however, to be near each other in chronological position. The objects of paste referred to are not to be confused with any of the Early Iron Age glass beads and pendants, nor with the notched cylindrical beads of Roman Egypt[1] and of the Early Levant, nor with the beads found with Merovingian and Anglo-Saxon remains[2] and in the cemeteries at Hallstatt[3] and at Marzabotto,[4] in Northern Italy.

They may be classified as Globular, Cylindrical, and Ring-like, and they fall into ten types, all of which are shown in fig. 13, in the preparation of which I have had the assistance of Mr F. R. Coles.

In the Globular class is a minute round bead (type No. 1),[5] and scarcely $\frac{1}{8}$ of an inch in diameter; an ovoid bead (type No. 2)[6] about

[1] See, for example, in the British Museum, beads of the Roman period presented by the Egyptian Exploration Fund (1886) from Defenneh.

[2] Anglo-Saxon glass beads, of the shape under discussion, are referred to in *Wilts. Arch. Mag.*, xxviii. 107; *Forty Years' Researches*, figs, 783, 851, 865, 884, and 888; and in *Arch.*, xlviii. 331 and 336.

[3] Von Sacken's *Das Grabfeld v. Hallstatt*, p. 77.

[4] Gozzadini, *Antic. Necrop. a Marzabotto*, p. 45; *Arch. Jour.*, viii. p. 352; *Arch.*, xliii. p. 497.

[5] These beads are green and very weakly translucent, with furred or roughened surface (possibly the result of the friction of blowing sand). Whether they should be here classified is doubtful. None has been found with definite associations. The twenty-eight specimens in the National Scottish Collection all come from Culbin, Elginshire, while one in my possession was found in Wigtownshire. It is shown in fig. 13, No. 1. Identical in size and colour, but of clear glass, are some other beads from Culbin, but they have been excluded.

[6] Four specimens of this type, one of which is shown in fig. 13, No. 2, were discovered with types 9 and 10 within an urn which contained burned bones got in a Dorsetshire barrow in 1843. Dr Thurnam and subsequent writers have overlooked this remarkable discovery, which is carefully described, and the objects figured, in *Archæologia*, vol. xxx. p. 330. To some type of the Globular class may belong a green bead from a Dorset grave-mound, "in form merely a drop of glass" (*Arch. Jour.*, iii. 58); a "small blue opaque glass bead" found in a Somerset grave-mound (Rutter's *North-West Somerset*, p. 329; *Arch. Jour.*, xvi. pp. 148–9); a larger bead found within an urn in Sussex (Horsfield's *History of Lewes*, vol. i. p. 49, pl. iv. fig. 9); a bead of blue colour reported in 1779 (*Arch.*, vol. vii. p. 414) as found with a cremated urn-burial; and four small beads of light green vitreous

$\frac{1}{4}$ of an inch in greatest diameter, and (type No. 3)[1] a flattened globe about $\frac{1}{2}$ an inch in greatest diameter.

In the Cylindrical class are four types. There is (type No. 4) the well-known thin notched bead (the least rare)—a notched or segmented cylinder like a set of round beads strung closely together. The bulbs, which are sometimes irregular in shape (as shown in fig. 13, Nos. 4A to 4B), vary in number in each bead from two to twelve, and vary in diameter from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch. Each bead has bulbs usually of uniform size. The length of the bead varies from $\frac{1}{2}$ inch to $1\frac{1}{4}$ inches. To this type belong two of the Stevenston beads (see fig. 6).[2] Beads of

paste found in a Bronze Age grave-mound and within an urn in East Kent (*Arch. Cant.*, vol. ix. pp. 21–26 ; *Arch.*, xlv. pl. viii. No. 7, p. 55). Four "minute beads of green glass" from a barrow at Fovant, Wiltshire (Devizes, *Mus. Cat.*, 222*b* ; *Anc. Wilts.*, 236), may be early mediæval. Two small round beads said to be of glass, but of the precise fabric and colour of which I am unaware, are figured in Nilsson's *Stone Age*, Eng. edn., 1868, p. 82, and in his *Ureinwohner*, 1868, p. 65.

[1] A specimen was found with an urn in a barrow at Ringwould, Kent (*Arch.*, xlv. p. 53), and is shown in fig. 13, No. 3. When Stukeley referred to a bead of "white earth" (*Stonehenge*, p. 62, Tab. xxxii.), he may have had before him a specimen of this type or of type No. 2.

[2] In Wiltshire this type of bead was got in twelve barrows (*Anc. Wilts.*, i. 46, 76, 114, 161, 163, 168, 205, 207, 211, 238, and title-page), and others are recorded from the same area (Thurnam, *Arch.*, xliii. p. 495 ; *Wilts. Arch. Mag.*, vi. p. 324) and from Dorset (Warne's *Celtic Tumuli of Dorset*, ii. p. 13) and Cambridgeshire (*Arch. Jour.*, ix. p. 22). Others are mentioned by Mr Woodruff (*Arch.*, xlv. p. 53), and by Canon Greenwell (*Arch.*, vol. lii. p. 51), and in *Jour. Royal Inst. Cornwall*, xxi., pl. iii.

Many of these South English specimens are preserved in the British Museum, and in Devizes Museum.

In the British Museum are a set of thirteen from Wiltshire (*Anc. Wilts.*, p. 204) ; a set of ten from the same county (Hawley Collection) ; a set of seven from Cornwall (*Jour. Royal Inst. Cornwall, supra*) ; a set of five from Dorset (Durden Collection, Warne's *Celtic Tumuli, supra*) ; a set of three from Wiltshire ; one and a fragment of another from the same county (*Arch.*, xliii. p. 494) ; a fragment of one from Sussex (Horsfield's *History of Lewes*, p. 47—Mantell Collection),—in all, forty-one beads or fragments of beads, representing seven discoveries.

In Devizes Museum, all from Wiltshire, are a set of ten (*Anc. Wilts.*, 76, pl. ix.), two sets of three each (*Anc. Wilts.*, 163, pl. xvii.), a set of two (*Anc. Wilts.*, 205), two single specimens (*Anc. Wilts.*, 168 and 211),—in all, twenty beads, representing six discoveries. In Northern England one, and the fragment of a second in the same

nearly the same shape of a later period are often of a brownish iridescent glass.[1; 2]

When the bulbs of the bead are set well apart as if strung detached on a bar it falls into type No. 5,[3] and when the cylinder is spirally twisted, into type No. 6. Specimens of the last-mentioned type have been found in Wigtownshire and Ayrshire.[4]

The fourth cylindrical type (No. 7) is a bead slightly more than 1 inch in length, consisting of five closely-set, graded segments of rectangular section, and each nearly $\frac{1}{4}$ of an inch thick. The central segment is $\frac{5}{8}$ of an inch in diameter. On each side of it is a small segment $\frac{3}{8}$ of an inch in diameter. Adjoining each of these last mentioned (and forming the terminal segments) is a still smaller segment $\frac{3}{16}$ of an inch in diameter.[5]

grave, have been found by Mr Mortimer, and are in Driffield Museum (*Forty Years' Researches*, p. 169).

There are thus sixty-two in English museums. I know of none recorded from Ireland or Wales.

In Scotland, most of the specimens on record are in the Scottish National Museum. In addition to the two now recorded from Stevenston, there was a specimen of three bulbs, also of grey colour, got within an urn at Marcus, Forfarshire (*Proc. Soc. Ant. Scot.*, vol. xxiv. p. 471). These, with twelve, five, and three from sand-blown areas in Elginshire, Wigtownshire, and Ayrshire respectively, represent twenty-two discoveries comprising twenty-three beads. A thin notched cylindrical bead from Wigtownshire (in my possession) of brownish grey colour, and more glassy than porcellaneous in texture, and another similar from Culbin in the National Scottish Collection, seem to belong to a later period, and are therefore excluded from the list just given. There are thus known to be in collections eighty-five specimens of type 4.

[1] See, for example, in the British Museum, beads of the Roman period presented by the Egyptian Exploration Fund (1886) from Defenneh.

[2] Instances of Anglo-Saxon glass beads, of the shape under discussion, are given in note 2, p. 397.

[3] A specimen is recorded in *Proc. Arch. Inst.* held at Salisbury, 1849, p. 93, fig. N; and another by Stukeley (*Stonehenge*, Tab. xxxii. p. 62). The latter is shown in fig. 13, No. 5.

[4] Three specimens are known. Two from different sites in Ayrshire are in Mr Downes's collection, and are figured in Smith's *Prehistoric Man in Ayrshire* at pp. 44 and 116. The third was found in Wigtownshire and is in my possession, and is shown in fig. 13, No. 6.

[5] Two are known, and were found in Cornwall within an urn by Mr Borlase (*Arch.*, xlix. p. 188). One is shown in fig. 13, No. 7.

The fourth class comprises three kinds of ring-like objects, all probably cast in moulds—discs convex on each face, or convex on one face and flat on the other, varying from about $\frac{3}{4}$-inch to $1\frac{1}{4}$ inches in diameter and $\frac{1}{4}$ of an inch in thickness, with large central perforation. The first (type No. 8) is a plain quoit-like ring.[1] The second (type No. 9) is similar, but has a small perforated protuberance or loop at one point at the periphery.[2] The third (type No. 10) is star-shaped, the periphery being cut into at regular intervals to form straight, rather short rays. One of the Stevenston beads (fig. 6) is of this type. A star-shaped bead in my collection was examined some years ago by Prof. W. Gowland, F.S.A., who stated it was of "crude enamel coloured by copper."[3]

[1] One, shown in fig. 13, No. 8, was got within an urn in Dorset (*Arch.*, xxx. p. 330). A fragment of one of this type or of type 9 was found in Ayrshire (*Prehistoric Man in Ayrshire*, p. 44, fig. 111). With the assistance of Mr J. Graham Callander, F.S.A. Scot., I have ascertained that six ring-like beads, or "quoit" beads as they have been appropriately called by some Irish archæologists, all of type 8 (and none of type 9, I understand), have been found in Ireland, but all without recorded associations. Mr Knowles has two; the Marchioness of Downshire, one; Mr G. Raphael, Galgorm, one; the Rev. Canon Grainger, Broughshane, Antrim, one; and the sixth specimen is preserved at St Columba College, Dublin. The Rev. L. Hassé has stated that the Irish specimens are the same as the English (*Journ. Roy. Soc. of Ant. of Irel.*, vol. xxi. p. 364). A ring of greenish material from Italy very like this type was given by Mr Temple to the British Museum about 1812. On close examination it was seen to be of stone, lathe-turned, and of a late period.

[2] Two of these pendant rings have been found in Sussex with Bronze Age burials. One, shown in fig. 13, No. 9, now in the British Museum, was found at Mount Caburn (Horsfield's *History of Lewes*, i. p. 47, pl. iii. fig. 4; *Horæ Ferales*, p. 200, pl. xxv.), and the other at Clayton windmill (*Arch. Jour.*, xix. 186, and *Suss. Arch. Coll.*, viii. 285).

[3] One only has been found in England. It is recorded as having six points, and as being grey like the recently discovered specimen from Stevenston (*Arch.*, xxx. p. 330). Irish specimens have been noticed (*Proc. Soc. Ant. Scot.*, vol. xxv. p. 510), and Mr Knowles possesses two specimens and the British Museum one. Scotland has yielded more of them than any other country, thirteen, whole or fragmentary, having been found there—one in each of the counties of Elgin, Ayr, and Perth, two in Aberdeenshire, and eight in Wigtownshire. Of the complete Scottish specimens, one has five points, three have six, one has eight, and four have nine points. One of Mr Knowles' specimens has nine points (the most frequently recurring number), and the other five points. One of them came from Whitepark Bay sandhills. One from Wigtownshire sandhills, in my possession, is shown in fig. 13, No. 10.

This enumeration seems to embrace all known varieties of Bronze Age objects of the coarse paste variously styled, in conjunction with many adjectives, "plaster," "concrete," "earth," "earthenware," "porcelain," "enamel," "pearly grey substance," "baked clay," "glass," and "paste," by writers since Stukeley in the first quarter of the eighteenth century.

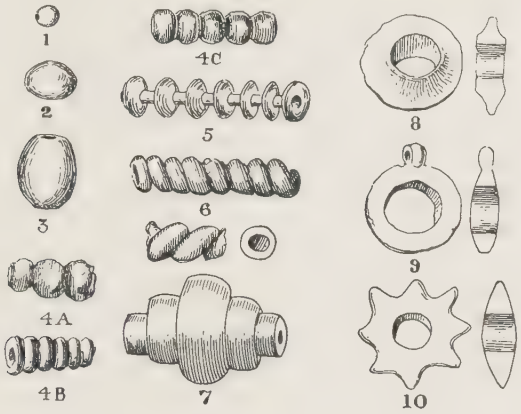


Fig. 13. A Classification of Prehistoric Beads of Coarse Vitreous Paste. Types 1 to 7 are shown actual size, and types 8 to 10 half actual size. I. *Globular*: Type 1, Wigtownshire; 2, Dorset; 3, Kent. II. *Cylindrical*: Type 4A, Ayr; 4B, Ayr; 4C, Wiltshire; 5, Wiltshire; 6, Wigtownshire; 7, Cornwall. III. *Ring-like*: Type 8, Dorset; 9, Sussex; 10, Wigtownshire.

Yet more classes and types may await discovery.[1]

In the sand-blown areas in Ayrshire there have now been found specimens of types Nos. 4, 6, 8 (or possibly 9), and 10. Types 2, 8, and 10 have been found within the same urn,[2] and in similar close association

[1] Resembling the well-known flattish conical "buttons" of jet or amber, with V-shaped perforation, was an object of "concrete" (*Arch.*, xlix. p. 189), got in the same grave-mound as specimens of type No. 7; which may constitute a fifth class and the eleventh type of these paste objects.

[2] *Arch.*, xxx. p. 330; see footnote No. 6, p. 397.

have been discovered types 4 and 3,[1] 4 and 7,[2] 4 and 9,[3] and 4 and 10.[4] Specimens of all types except 1, 5 and 6 have thus been found in the closest association, and are therefore contemporary. While there may be some doubt as to whether type 1 should be here classified, specimens of types 5 and 6 seem clearly identical in colour and fabric with specimens of the other types, and it may with some safety be inferred that types Nos. 2 to 10 (if not also No. 1) are contemporary.

Quoit-like objects of lignite, of type 8, have been found in the same urn with paste objects of types 4 and 9.[3] Lignite objects, of type 9, were got with a paste bead of type 4.[3] Near beads of type 4 was found a lignite object of type 9.[5] A bead of tin, of type 4, was got in a Wiltshire barrow.[6] The same type made of bone and ivory has been found in British barrows.[7] Type 5 occurs in black glass and in bronze.[8] Types 2 and 3 frequently occur in lignite.

I have failed to notice any precisely similar objects of vitreous paste in collections in various parts of Continental Europe, Asia, and Africa, and in collections of old-world relics in America, and to trace any reference by Continental investigators to these objects having been found outside of the United Kingdom.[9] Their rarity in Ireland (so rich in glass

[1] *Arch.*, xlv. p. 53.

[2] *Arch.*, xlix. p. 188; see footnote No. 5, p. 399.

[3] See footnote No. 2, p. 400, referring to the discovery at Mount Caburn.

[4] Within urn No. 5 described in this note.

[5] *Arch.*, vol. lii. p. 51.

[6] *Anc. Wilts.*, i. 103, pl. xii.

[7] *Anc. Wilts.*, i. 68.

[8] A specimen in black opaque glass from Culbin, Elginshire, is in the National Scottish Collection. Mr Downes has discovered a bronze specimen in Ayrshire. Beads of bronze of very similar form have been found at Hallstatt (*D. Grabfeld v. Hallstatt*, Taf. xvii. and pp. 76–80), and in Denmark (Boye's *Trouvailles de cercueils en chêne de l'age du Bronze en Danemark*, 1896, pl. xxvi.).

[9] Specimens of type No. 4 are, however, somewhat like the notched cylindrical beads of considerable rarity got with Egyptian remains of the pre-Roman periods. The British Islands seem particularly rich in different kinds of prehistoric notched cylindrical beads. These differed much at different periods with respect to size, fabric, and colour. There are five distinct kinds, which may be tentatively styled A, B, C, D, and E in order of a conjectural chronology. Class A, probably the earliest, is represented in the Stevenston "find." Class B is the rare, pale blue, opaque, smooth-surfaced bead of glass, almost like fine porcelain, about $\frac{3}{4}$-inch in

beads of a later period) is noteworthy, considering the number of explorations and the extent there of sandy and boggy areas. Their extreme rarity in the North of England is also remarkable, one bead and the fragment of another only having been recorded as found there, notwithstanding the industry of Yorkshire barrow-diggers.

Incidental to the manufacture of bronze was the production of a beautiful greenish-blue and sometimes a greyish vitreous slag; and fragments of this slag I have discovered on ancient Scottish sites, and two small lumps of brownish slag, with patches of greenish material, of coarse texture, were found at Culbin, and are in the National Scottish Collection. The chemistry of the slag is discussed in Figuier's *Primitive Man*, English edition, 1870, p. 261. Figuier there states that "chemistry and metallurgy combine to inform us that as soon as bronze foundries existed glass must have been discovered. What, in fact, does glass consist of? A silicate with a basis of soda and potash, combined with some particles of the silicate of iron and copper, which coloured it blue and green. As the scoria from bronze foundries is partly composed of these silicates, it is indubitable that a kind of glass was formed in the earliest metal works where this alloy was made. It constituted the slag or dross of the metal works."

Selected portions of this slag could easily be poured when molten into moulds, or otherwise manipulated to produce beads and bead-like objects of various shapes. It is probable that the native bronze artificers of these islands began and carried on the making of vitreous beads independently of any Egyptian or other outside influence.

The distribution of these beads points to the South of England and

length, in shape like two small oval beads (often of different sizes), joined end to end by a thick waist. A specimen has been found in Ayrshire, and in Aberdeenshire, and within a cinerary urn in Forfarshire (*Proc. Soc. Ant. Scot.*, xxv. p. 447). Class C is the less rare bead of clear blue or green glass, varying in length from $\frac{3}{4}$-inch to $1\frac{1}{2}$ inches, dumb-bell-shaped, like two round beads joined by a thin waist. It is common in Ireland, and less common in Scotland. Class D closely resembles class A, but is of clear blue glass in two or more bulbs. Class E is similar to class A, but of brown iridescent glassy material, and is found with Anglo-Saxon burials.

Scotland having been bead centres, and the whole body of evidence favours a theory that the beads have been made at home. There is literary and archæological evidence of a cross-channel bartering in beads of the Early Iron Age[1]; but there seems to be no evidence of such traffic in Bronze Age objects of vitreous paste.

[1] The reference in Strabo's *Geography* (iv. 5, par. 3) is vague, but archæological evidence is clearer.

For example, the globular bead of clear glass, with inlaid spiral lines of glass different from that of the body of the bead, is not uncommon in Scotland. One was found with a burial in Ross-shire (*P.S.A.S.*, vol. v. 313), with a bronze fragment and a peculiarly shaped urn, and may belong to the latest phase of the Scottish Bronze Period. A very similar bead from Hallstatt is figured by von Sacken.

Also found at Hallstatt were small flattish rings of fine surfaced blue glass and of opaque straw-coloured glass.

These have been found in Egypt and in France (in graves at Somsois, with objects of iron and bronze, according to Morel in the *Revue Archéol.*, 1866, pl. xiv. I.), and in graves at Præneste (*Arch.*, xli. 187).

A few straw-coloured specimens (some apparently lost or abandoned in course of being made) were found in a West Scottish hill-fort and in sandy areas in Elginshire and Wigtownshire, and specimens in blue glass have been obtained in the last-mentioned district, associated apparently with objects of the late Scottish Bronze Period.

# FORT ON BAR HILL AND ITS SURROUNDINGS.

Geo Waterston & Sons, Lith. Edinburgh.

V.

## THE ROMAN FORTS ON THE BAR HILL, DUMBARTONSHIRE, EXCAVATED BY MR ALEXANDER WHITELAW OF GARTSHORE, F.S.A. Scot. By GEORGE MACDONALD, M.A., LL.D., F.S.A. Scot., and ALEXANDER PARK, F.S.A. Scot. With a Note on the Architectural Remains, by THOMAS ROSS, Architect, F.S.A. Scot. (Plates I.–IV.)

### I. The Site and its History.

Travellers by the Edinburgh and Glasgow Railway seldom fail to notice a small clump of hills that lies rather more than a mile to the north-west of Croy Station. The accompanying map (Plate I.) reproduces its chief geographical features. The twin peak so conspicuous from the train belongs to what may be called the south-easterly spur of the range. This spur is in reality a whinstone ridge, easily ascended from east or west, but sloping sharply upwards from the southern side, and still more sharply downwards on its northern face. Its heights, which attain an elevation of 511 feet, are planted, and form part of what is known as the Bar Hill Wood. From the summit one looks northward, over a green basin of arable land, to a very similar, but much shorter and slightly lower, ridge which culminates in a single rocky peak usually called the Castle Hill (507 ft.). Towards the east the green basin is open. Its western side climbs gently until it loses itself on the steep shoulders of two flat-topped hills that constitute the main, though not the highest, portion of the whole group. These latter are separated from each other by a comparatively slight depression, and to each of them is attached one of the spurs or ridges already described. The narrower and more southerly of the flat-topped hills goes by the name of Creecy Hill (486 ft.). The more northerly we shall call the Bar Hill proper (495 ft.). It is with this last that we are here specially concerned. In the course of the operations with which we have to deal, its surface was found to consist of a thick layer of boulder clay. On the southern side of its highest part the clay rests on a bed of sand.

The situation of the range is remarkable. Rising as nearly as possible midway between sea and sea, it also contains the highest ground along the line of the isthmus. The view from the top of the Castle Hill—the most favourable point for the purpose—is very extensive. On the north, visible in its completeness from end to end, stretches the low valley that runs from Forth to Clyde. Across the intervening river Kelvin frown the Campsie Fells and their sister hills, forming an imposing natural bulwark to the "northern realms of ancient Caledon." Even the uninstructed feels instinctively that this would be a position of vital importance to any military force attempting to hold the isthmus from the south. As a matter of fact, when the spectator turns eastward, his attention is immediately arrested by the deep depression that still marks the course of the great Ditch dug by the Roman legions. His eye would find it easy to follow the line all the way from Croy Hill to the very spot where he is standing. Some thirty or forty yards beneath him, it sweeps along the northern face of the Castle Hill, hewn nine feet deep into the solid rock, and passes away to the west. Behind it are still discernible the traces of the companion Rampart.

A glance at the map will show how the conditions imposed by the configuration of the ground were met by the Roman engineers. Both Ditch and Rampart at this point of their course bend decidedly to the north, with the express object of enclosing the Castle Hill, a coign of vantage which it would not have been safe to leave outside. But the slopes of the hill itself were far too steep to afford secure foothold for the Military Way, which was thus compelled to keep some distance to the south. When the green basin already spoken of, generally styled the Castle Hill Park, is under cultivation, the line of the Roman road can even now be clearly made out, crossing it from east to west, and marked by a slight elevation of the surface. About half-way up the western side of the basin it divides into two, one section branching northwards so as to approach the Rampart once more, the other ascending directly towards the centre of the Bar Hill proper.

There is good reason to think that somewhere within this basin, under the shelter of the friendly hills, there may at one time have nestled a civil settlement or *annexe*, such as was the ordinary accompaniment of every permanent Roman military station. An indication to that effect was furnished during the progress of the recent excavations. And other signs have not been wanting. An altar dedicated to Silvanus was found here in 1895. Again, about the middle of its southern side there is an excellent spring of water, near which (according to the testimony of labourers still living) drainage operations have disclosed substantial remains of stone paving. However this may be,[1] it is certain that the Bar Hill proper was the site of a Roman fort. It is admirably adapted for the purpose. Its top consists of a wide and comparatively level expanse, but on every side except the south the descent is sufficiently steep to be a material aid in defence. To the north, more especially, the fall of the ground is rapid. An attacking party from that direction could only have got within striking distance after a continuous climb of nearly 300 feet. Finally, the discovery of a buried well showed that in the very centre of the plateau there had been in Roman times an abundant supply of water.

Two hundred years ago the remains of the buildings of the fort were still considerable. There is, indeed, no mention of them in the earliest 'archaeological survey' of Graham's Dyke, the well-known letter of 1697 preserved among the Portland Papers. The writer has much of interest to say concerning the eastern half of the Vallum and its forts. But when he reaches the neighbourhood of Bar Hill, he breaks off with tantalising abruptness. Kilsyth, he tells us, is

> a pretty good countrey town, but inferior to Fallkirk or Linlithgow; but this I say for it, there is better entertainment for man and horse and more reasonable than anywhere upon the road. . . . When I am at leasure I will give you the rest of this.[2]

[1] The operations referred to were carried out in 1873, and the stones are said to have been carried away to be used as drain covers. Systematic search recently made for traces of the paving has been fruitless.

[2] *Hist. MSS. Commission*, *Portland Papers*, vol. ii. p. 57.

Ten years later (1707) Sir Robert Sibbald, using the materials collected by Timothy Pont, Irvine, and David Buchanan, wrote as follows :—

> From thence [Shirva Burn] a large mile to Barhill, where was a great Fort, which hath had large Entrenchments, the ruins of Buildings were traced there, and many Stones have been found there with Inscriptions, and some with Figures upon them, which are kept at the Houses of the Nobility and Gentry in the Neighbourhood, there is a fresh Spring there and a Fountain, and amongst the Rubbish of the Fort, there was found a large Iron Shovel of a vast weight, and divers Sepulchres covered with large Stones, were found there upon digging the Ground.[1]

Sibbald's mention of the "fresh Spring" and the "Fountain" is of interest. The latter is probably identical with the spring that still bubbles on the south side of the green basin. The former was in all likelihood the overflow from the buried well in the centre of the camp. If this surmise be correct, a further accumulation of debris on the surface must have almost completely choked the "Spring" soon after it was seen by Sibbald (or his authorities).[2] There is no reference to it in the *Itinerarium Septentrionale*, and yet it is just one of the things that could hardly have failed to catch the eye of 'Sandy' Gordon, had it still been visible. His description is as follows :—

> [At Bar Hill there] is to be seen a very large and well preserved Fort upon the Wall : Here the Foundations of Buildings appear very distinct within the Area ; which is surrounded with a considerable Number of Ditches and Ramparts, particularly at the East and West Ends of this Fort. . . . There is no *Roman* Fort, which I know of in *Scotland*, where the Vestiges of the old Buildings appear so plain as here, seeing the *Prætorium*, where the Præfect's Tent stood, is as yet very discernible, together with the Lodgements of the other Officers. . . . The military Way along *Graham's Dike*, divides itself into two Branches here, the one running by the side of the great Ditch, the other comes up to the Ramparts of this Fort.[3]

As it stands, the statement regarding the division of the road might be interpreted as perfectly accurate. Gordon's actual plan,[4] however,

[1] *Historical Inquiries*, p. 29.

[2] The possible effects of mineral operations in the neighbourhood must also be reckoned with. It may be mentioned that the water of the well now rises to within 2½ feet of the surface, at which level it stands.

[3] *Itin. Sept.*, pp. 54 f.

[4] *Op. cit.*, Plate 22.

is erroneous, and would appear to have been completed, not by the aid of observations on the spot, but by a literal interpretation of the text as printed, for the southern branch of the road, instead of soberly entering the fort by the eastern gate, is made to run full tilt against the ramparts.

Horsley, writing in 1732, was almost as much impressed by the remains as Gordon had been. He says:—

> Barhill fort deserves a particular regard and description. Its situation and strength, and the ruins of buildings within it are very remarkable. . . . It has a triple rampart and a ditch on all sides but the north. The *praetorium* is visible, and of a similar figure within the fort itself. And three rows of ruins resembling ramparts and ditches appear within the *praetorium*. . . . There is a branch goes off from the principal military way to the north entry of this fort, and goes out again at the east entry, and then passing round the south side of the southern summit, comes up again to the main way.[1]

There is an obvious confusion here regarding the road, and the rampart is single, not triple. But the "three rows of ruins" (well shown, by the way, in Gordon's plan) were rediscovered during the recent excavations, when their true significance was made apparent. Maitland (1757) offers no fresh contribution of importance to our knowledge. As usual, his main anxiety is to detect flaws in the statements of Gordon and Horsley. Their accounts of the road give him an opening of which he takes full advantage. Unluckily, after he has administered a severe castigation to his predecessors for their stumbling, he himself falls headlong over precisely the same obstacle. "After the strictest search," he denies that the Military Way ran on the north of the fort. He is positive that it went straight through.[2]

Roy, in his *Military Antiquities*, deals very briefly with the Bar Hill station.

> The fort, which is a little way detached from the south side of the wall, was probably one of those previously erected by Agricola. It is surrounded with double ramparts [and] contains many ruinous foundations within its area, whose vestiges, however, are not now so entire as represented in the Itinerarium.[3]

[1] *Britannia Romana*, p. 169. [2] *History of Scotland*, pp. 176 f.
[3] *Op. cit.*, p. 160.

Roy, it will be seen, has been misled by surface appearances; as has already been remarked, the rampart is a single one. In his plan, too, he goes wrong about the roads just as Maitland had done, for he makes the Military Way traverse the camp from east to west. Yet his reference is exceedingly interesting for two reasons. He was the first observer to draw attention to the peculiarity presented by this fort in being completely detached from the body of the Vallum, a feature the true significance of which his military instinct enabled him to divine. Again, from what he says we can gather that the latter part of the eighteenth century saw many inroads on the ruins. One of these destructive raids seems to have taken place about 1790. In the old *Statistical Account of Scotland*[1] (1791) the minister of Kirkintilloch, speaking of Bar Hill, says:—

> The fort is a square area of 150 yards. Some vaults belonging to it have lately been discovered. These are still entire; and are covered above with flat bricks, and floored with a mixture of lime and black and white gravel, resembling sand from the sea-shore, very unlike any that is now to be found in the neighbourhood.

During the early portion of the nineteenth century the process of quarrying went on apace. The site of the fort forms part of the estate of Gartshore, and in 1801 and 1802 the then proprietor carried out an extensive improvement scheme which was doubtless responsible for much. It may be to these changes that Stuart alludes when, writing in 1845, he tells us that

> Many of [the foundations] have only been recently removed, to supply materials for building, or to serve the purpose of enclosing the adjacent fields.[2]

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[1] Vol. ii. p. 276.

[2] *Caledonia Romana* (first ed.), p. 331. In the second edition, p. 338, a footnote (from another hand than Stuart's) gives a remarkable story of destruction said to have been wrought in 1809, when "stone walls" were "demolished" and "massive foundations rooted out." The accuracy of this whole statement is open to serious doubt. It is asserted, for instance, that the fort was "surrounded by a thick stone wall forming a great square." Mr Whitelaw's excavations proved conclusively that this was not the case. The original narrator may have been confusing Bar Hill with Castlecary.

In 1892 the remains attracted the notice of the Glasgow Archaeological Society's Committee, then engaged on an examination of the structure of the Antonine Vallum. In their published *Report* they say :—

> The outline of the station can still be made out in the field—the indent of the ditch all round being readily traceable, as well as the rounded corners of the enclosure.[1]

It might have been added that beneath the field hedge on the south the kerb of the southern rampart peeped out here and there above the grass. Even so, the picture presents a melancholy contrast to that drawn a century and a half before by Gordon. A few years longer, and the very site would perhaps have been forgotten. Fortunately, it was not to be so.

## II. Mr Whitelaw's Excavations.

An entirely fresh chapter in the history of the fort was opened in 1902. In the preface to the *Report* already quoted, cordial acknowledgment is made of the liberality with which Mr Alexander Whitelaw of Gartshore had placed at the service of the Glasgow Committee the labour necessary for cutting the numerous sections of Rampart and Ditch made at Croy and at Bar Hill. If his generosity deserved warm recognition then, Mr Whitelaw has now laid under a much deeper obligation all who are in any way interested in the story of Roman Britain. With a public spirit that is beyond praise, he has had the camp and its surroundings systematically explored at his own expense, keeping in close personal touch with the work throughout, and letting it be clearly understood that excavation was to proceed until there was nothing more to be discovered. It is but fair to add that the success achieved is due in no small measure to the enthusiasm, care, and well-reasoned perception of Mr John M'Intosh, the forester on the Gartshore Estate, to whom was entrusted the duty of immediate supervision. Mr M'Intosh has also rendered valuable aid in the preparation of the present Report.

Operations were commenced on November 20th, 1902. Attention

[1] *The Antonine Wall, etc.*, p. 94.

was first directed to those points where the surface indications were at all abnormal. The field had been under corn, and several patches showed stubble of unusually vigorous growth. An hour or two sufficed to dispose of these. On their being 'pitted,' the evidence was such as to suggest that, at some time or other, at least some of them had been fireplaces. Underneath each was a layer of wood ashes, from 1 to 2 feet thick, with a large stone in the centre. The spot next chosen for attack lay almost exactly in the middle of the fort. It had long been remarkable for its peculiar greenness in spring and early summer. The sloping ground immediately to the south of it, too, was frequently damp. Digging soon revealed the cause of these phenomena. Less than a foot beneath the surface the workmen struck the kerb of an old well.

Such a discovery on the very first morning was a piece of rare good fortune, and it was followed up without delay. In the face of considerable difficulties, the well (which had plainly been filled up of set purpose) was entirely cleared out. The upper stratum was disappointing. It consisted wholly of building material—pieces of freestone of various sizes, sometimes dressed, but generally quite rough—piled in hopeless confusion. At a depth of 12 feet there came to light the capital of a column, the precursor of much that was interesting. On November 22nd the workmen were 17 feet down, and had recovered five capitals and bases of pillars, 15½ linear feet of round columns, and one fragment of an inscribed tablet. At this juncture it became necessary to erect overhead gear. In view of the great weight of the stones and the consequent danger of serious accident, it was deemed advisable to employ two winches, one to let down and pull up the man who attached the tackle for haulage, the other to bring to the surface the columns, bases, and capitals that now formed an almost solid mass, the larger pieces usually jammed hard against the stone 'cradling' of the well. With a total diameter of not more than 4 feet, the space conditions were extremely trying. The water also proved very troublesome, rising with steadily increasing rapidity. To keep it under, a running gear with two buckets had to be constantly in motion.

All obstacles were, however, overcome; and the deeper the workmen descended, the keener grew the interest. On November 24th a second and third fragment of the inscribed tablet reached the surface, as well as more portions of pillars and a few pieces of oak. On Monday the 26th, besides further portions of pillars, the spoils included an inscribed altar (found 33 feet down), the horn of a red deer, a single coin (which was resting on the edge of one of the 'cradling' stones), a number of bits of squared oak, the frame and pulley wheel that had belonged to the original overhead gearing, and many pieces of iron. On the 27th, at 38 feet, there was found a broken amphora of great size, with a bag of what looked like tools inside the largest fragment, as well as a miscellaneous collection of objects of iron. Bottom was finally touched at 43 feet. Immediately above, a stratum of mud and small stones, $2\frac{1}{2}$ feet in thickness, had been encountered. The whole of the material of which it was composed was carefully washed through riddles, with the result that a number of coins and other small objects were recovered. The foundations of the 'cradling' were then strengthened with cement, the bottom filled in with concrete, and the well allowed to fill with water. Fig. 1 is a view taken after all was over. In the background are shown some of the building-stones that had been used to fill the uppermost portion.

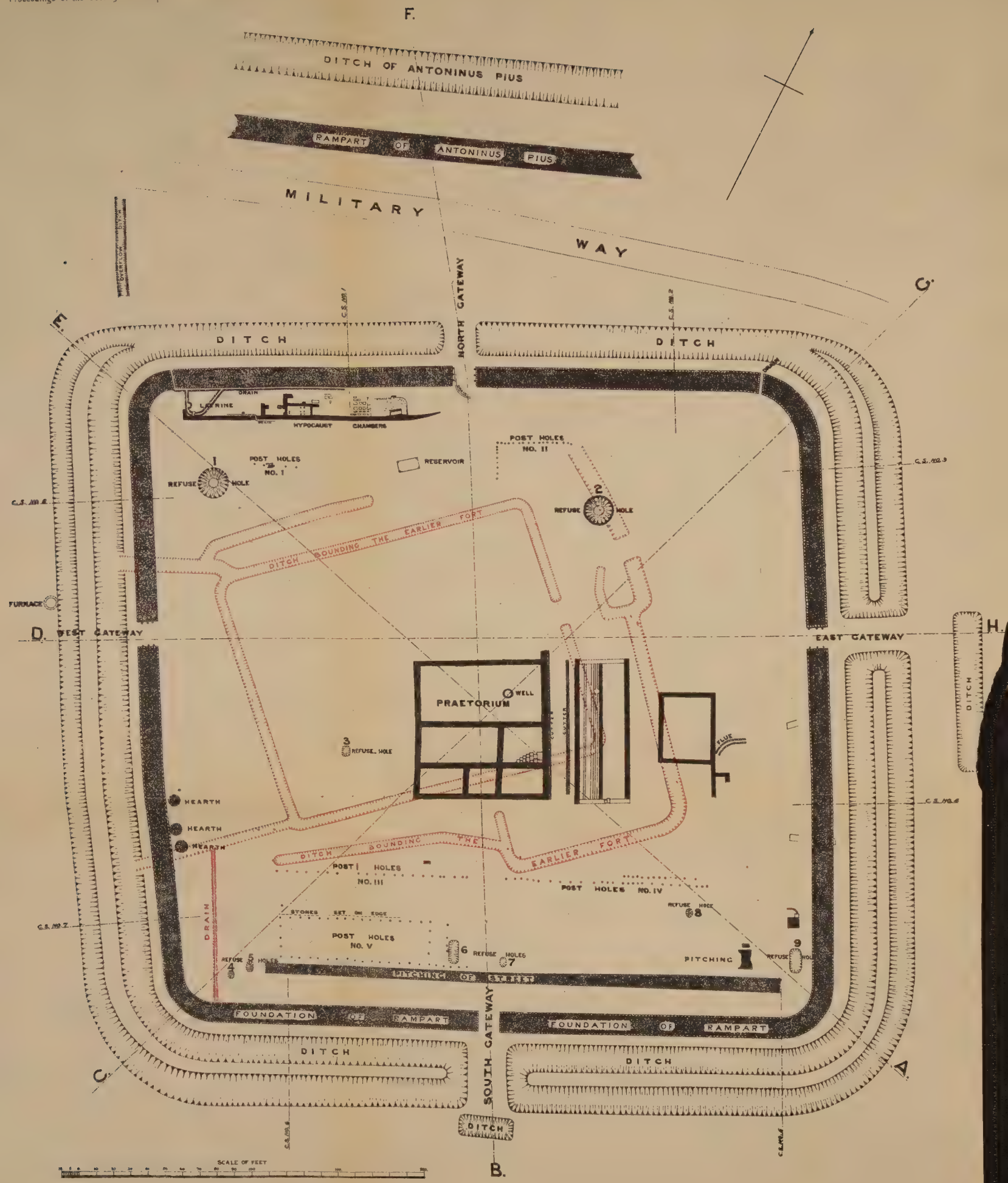
An inventory of the contents of this wonderful cache will be given below. Its exploration provided a powerful incentive to further investigation of the site, and the subsequent operations, though fruitful in many ways, furnished no episode nearly so exciting. The work proceeded—more or less intermittently, according to the season—until the summer of 1905. During the first few months of its course the excavators were much hampered by wet weather, and particularly by a succession of heavy rainstorms, which interrupted the digging, caused the excavations in many cases to fall in,[1] and interfered seriously with accurate observa-

[1] It was specially unfortunate that much damage was done before photographs were secured. But for this, the illustrations in the present Report would have been a good deal more effective.

tion. A detailed narrative of events is, however, hardly called for. It will be at once simpler and clearer to summarise and illustrate under

Fig. 1. The Well.

appropriate headings the more important of the results obtained. From a historical point of view, the most interesting of these was the confirma-




# PLAN OF ROMAN FORT AT BARHILL.

Geo Waterston & Sons Edinburgh

tion of Roy's conjecture that the Bar Hill had originally been fortified under the orders of Agricola. It will be convenient to deal first with the evidence for this older occupation.

## III. The Early Fort.

Of the early fort no trace whatever remained above the surface. Its discovery was accidental. During a search for buildings within the ramparts of the later enclosure, the workmen had occasion to cut a series of parallel trenches N. and S. Quite unexpectedly these revealed a large ditch about 9 feet wide by $4\frac{1}{2}$ feet deep, and of the V-shaped type so frequently associated with Roman military engineering. On further examination, this ditch proved to be part of a connected system. When the whole had been opened up, there finally emerged the outline shown in red upon the Plan (Plate II.), and here reproduced independently as fig. 2. Its form speaks for itself so clearly that verbal description is hardly necessary.

The shape and size of the fort proper are indicated by the course of the inner ditch. It was oblong, with slightly rounded corners. The major axis ran nearly due S.W. and N.E., and had a total length of 191 feet, measured over the ditch at either side. The minor axis, similarly measured, had a length of 160 feet. After deduction for the breadth of the ditch, this gives an interior area of little more than half an acre. And the available space must have been still further reduced by the ordinary requirements of defence. There would certainly be a rampart running all the way round. As the depth of forced soil was always greater on the inner than on the outer margin of the *fossa*, it is probable that the rampart was an earthen *agger*, in the construction of which the upcast would be utilised. There were no signs of a stone foundation. The fort appears to have had but a single gateway. This stood almost in the centre of the N.E. side, and had a width, at the ditch, of 14 or 15 feet.

As will be seen from the Plan and from fig. 2, there was also an outer

defence, consisting mainly, if not entirely, of a second ditch. This latter presents some rather remarkable features. The line it follows is far less regular than might have been expected, and the object of the

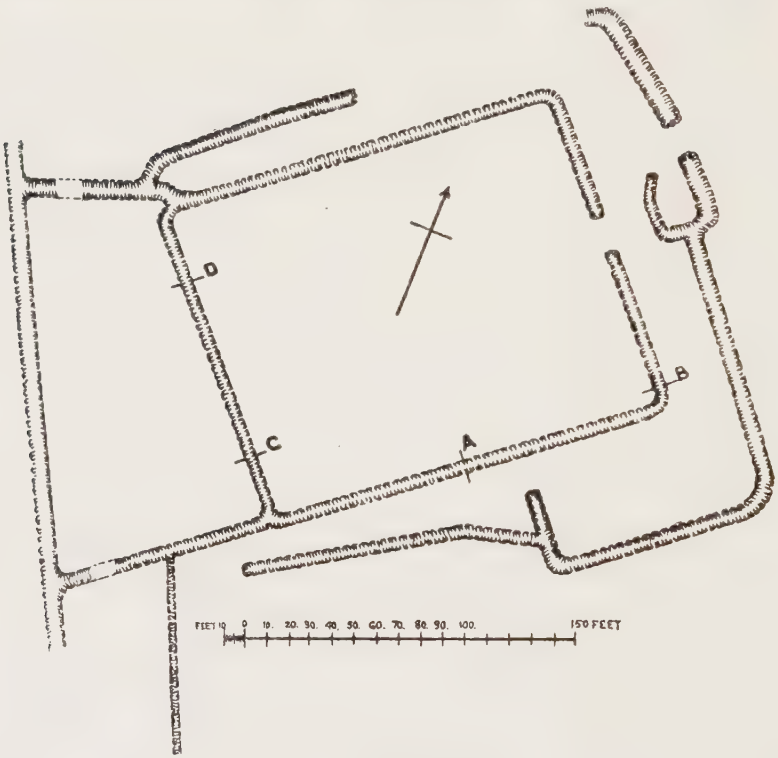
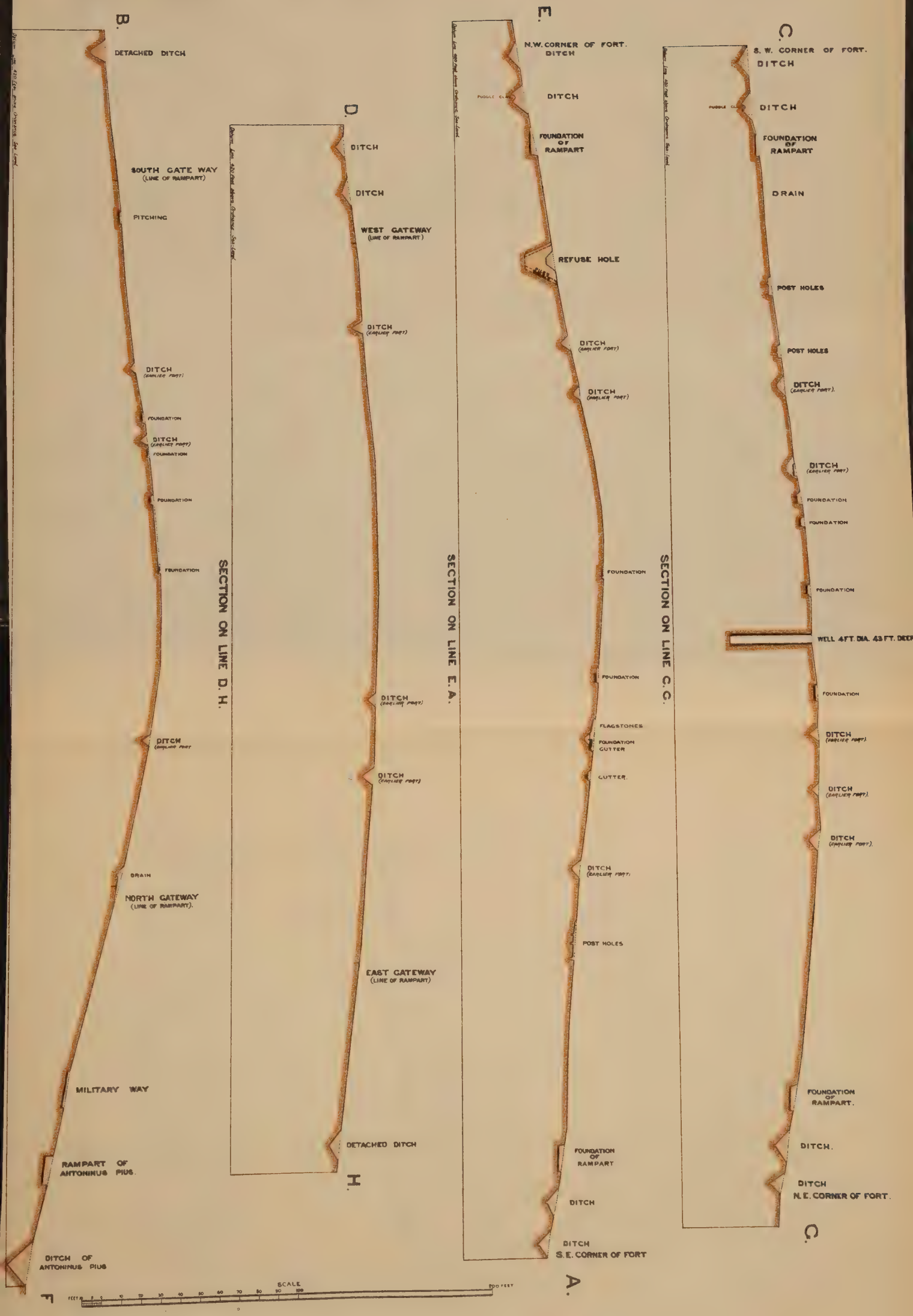



Fig. 2. The Early Fort.

deviations is not always easy to appreciate. The ingenious way in which it is doubled in front of the gate of the fort is, of course, readily intelligible. Again, the break just beyond the doubled section was obviously the regular entrance; its width corresponds very closely to the width of the break in the inner ditch. The apparent weakness of


B.
DETACHED DITCH
SOUTH GATE WAY (LINE OF RAMPART)
PITCHING
DITCH (EARLIER PORT)
FOUNDATION
DITCH (EARLIEST PORT)
FOUNDATION
FOUNDATION
FOUNDATION
DITCH (EARLIER PORT)
DRAIN
NORTH GATEWAY (LINE OF RAMPART).
MILITARY WAY
RAMPART OF ANTONINUS PIUS.
DITCH OF ANTONINUS PIUS
F.
SECTION ON LINE D. H.
D.
DITCH
DITCH
WEST GATEWAY (LINE OF RAMPART)
DITCH (EARLIER PORT)
DITCH (EARLIER PORT)
DITCH (EARLIER PORT)
EAST GATEWAY (LINE OF RAMPART)
DETACHED DITCH
H.
E.
N.W. CORNER OF FORT.
DITCH
DITCH
FOUNDATION OF RAMPART
REFUSE HOLE
DITCH (EARLIER PORT)
DITCH (EARLIER PORT)
FOUNDATION
FOUNDATION
FLAGSTONES
FOUNDATION GUTTER
GUTTER.
DITCH (EARLIER PORT)
POST HOLES
FOUNDATION OF RAMPART
DITCH
DITCH S.E. CORNER OF FORT
A.
SECTION ON LINE E. A.
C.
S. W. CORNER OF FORT.
DITCH
DITCH
FOUNDATION OF RAMPART
DRAIN
POST HOLES
POST HOLES
DITCH (EARLIER PORT).
DITCH (EARLIER PORT)
FOUNDATION
FOUNDATION
FOUNDATION
WELL 4FT. DIA. 43 FT. DEEP
FOUNDATION
DITCH (EARLIER PORT).
DITCH (EARLIER PORT).
DITCH (EARLIER PORT).
FOUNDATION OF RAMPART.
DITCH.
DITCH N.E. CORNER OF FORT.
C.
SECTION ON LINE C. C.
SCALE
100 FEET

the whole N.W. face is more difficult to understand. The great gap on that front seems to have been unprotected. It is, of course, always possible that it may have been covered by a palisade, or by some form of brushwood entanglement. But no evidence to that effect was forthcoming. The post-holes discovered towards its eastern end clearly belonged to a later structure; some of them had actually been sunk in the filled-up ditch.

Contiguous to the fort on the S.W. was an *annexe* having the shape of an irregular quadrilateral. Its exact form was doubtless determined by the secondary purpose which its ditches were evidently intended to serve. A comparison of Plan (Plate II.) and Sections (Plate III.) will show that any water accumulating in the inner ditch of the fort would be drained off westwards by the ditches of the *annexe*. At one point the southern ditch of the *annexe* dipped into a hollow, and just there it was tapped by a long conduit, dug into the clay and covered with large flag-stones. No corresponding provision was necessary on the N.W., as on that side the inclination of the ground was such that the northern ditch of the *annexe* would drain the other ditches into the most westerly ditch of all.[1] This last, it should be observed, was afterwards transformed, by the engineers of the second occupation, into the inner ditch of the later fort—a circumstance that gave not a little trouble to the excavators. They owe the solution of their difficulty to a timely visit from Mr Haverfield.

As has already been stated, the whole of the early ditches were cleared, except, of course, where they passed beneath the walls of the later or Antonine buildings. It is noteworthy that the only relic they yielded was one old shoe. The usual method of opening them was to dig a narrow trench down the centre. The earth then slipped away from the sides and was easily shovelled out. At four places, however, complete

[1] It is worth drawing attention to the ingenious bending of the various ditches at the N.W. corner of the fort. The object was evidently to break the force of the water that, after heavy rain, would rush from three different directions into the northern ditch of the *annexe*.

sections were cut, with the view of observing the precise nature of the stratification. The following was the result:—

*Section No. 1* (cut at the point A;[1] width of ditch, 9 feet; depth of ditch, 4 feet 3 inches).—This was almost entirely filled with cut pieces of turf in a wonderful state of preservation. Near the surface were a number of small bones. Roots of whin and hazel were embedded in the sides.

*Section No. 2* (cut at the point B;[1] width of ditch, 8 feet; depth of ditch, 4 feet 2 inches).—At the bottom was a depth of 1 foot 9 inches of soft clay. Then came loose soil, stones, and pieces of heathery turf. Hazel roots were again in evidence, and also fragments of branches.

*Section No. 3* (cut at the point C;[1] width of ditch, 8 feet; depth of ditch, 3 feet 7 inches).—The bottom was composed of sandy silt and vegetable matter, in a layer 1 foot 10 inches thick. Upon this there rested a mass of loose soil and stones, near the foot of which were found a few small pieces of cut wood.

*Section No. 4* (cut at the point D;[1] width of ditch, 11 feet; depth of ditch, 4 feet 6 inches).—Here 1 foot of soft clay, at the bottom, was followed by 1 foot 6 inches of vegetable matter and sand. Next came loose soil and stones. The sides of the ditch once more contained roots of hazel and whin.

Such are the main facts as ascertained by help of the spade. We have still to inquire what inferences can safely be drawn. The mere existence of the *annexe*, no less than the elaborate arrangements for drainage, proves that the early fort was more than the temporary halting-place of a detachment on the march. It was constructed to be the permanent home of a small garrison. But the period of actual occupation was very short. Had it been otherwise, broken pottery and similar debris would inevitably have gathered in the ditches. When the builders of the second and larger fort arrived upon the scene, the

[1] See fig. 2.

site had long been abandoned. The ditches had silted up to the depth of about 2 feet. Above that they were still open, but their sides were overgrown with brushwood. Half a century would seem a reasonable allowance for the transformation, and this tallies admirably with the historical data. It is beyond question that the later fort is contemporary with the Vallum of Antoninus Pius. In other words, its erection may be fixed at about 140 A.D. Going back fifty or sixty years, we find that Agricola, in the course of his fourth campaign (81 A.D.), erected a line of fortified posts along the southern side of the Forth and Clyde isthmus.[1] Three or four years later he was recalled by Domitian, and the Roman troops apparently withdrawn from Caledonia.[2] The links in the chain of testimony could hardly be forged more strongly. The early fort on the Bar Hill is to be associated with Agricola's 'conquest.' Its situation and its cunningly devised defences furnish an apt illustration of the eulogium of Tacitus: "Experts used to remark upon the exceptional sagacity he displayed in choosing suitable sites; they said that no fort planted by Agricola had ever been either taken by storm or surrendered upon terms."[3] At the same time, its size shows how slender was the force he could spare for garrison duty, how precarious the foothold he had won. It is a strange commentary on the boast which Tacitus makes him address to his soldiers: "*Finem Britanniae non fama nec rumore, sed castris et armis tenemus; inventa Britannia et subacta.*"[4]

## IV. The Antonine Fort.

### *A. General Description.*

The later or, as it may conveniently be termed, the Antonine fort was fully six times as large as its predecessor. It was more nearly square in shape, but had the usual rounded corners. For a detailed plan see Plate II. Measured from the inner kerb of the rampart at the

[1] Tacitus, *Agricola*, c. 23.
[2] *Perdomita Britannia et statim missa*, as Tacitus puts it in his *Histories* (i. 2).
[3] Tacitus, *Agricola*, c. 22.
[4] *Ibid.*, c 33.

gateways, the dimensions were 375 feet from W. to E. and 369 feet from S. to N. The area was, therefore, just over three acres.[1] The general situation is clearly exhibited in the sections (PLATE III.). No. 1, which passes right through the Well, runs (on line CG) from the S.W. to the N.E. corner. No. 2 runs along the other diagonal (on line EA) from N.W. to S.E. No. 3 follows a line (DH) between the W. and E. gateway. No. 4 gives the corresponding line (BF) from S. to N., and is at the same time prolonged sufficiently far to include the ditch of the Antonine Vallum. A comparison of the levels will show that the fort occupied the whole crown of the hill. The highest point is not very far from the centre. The ground falls away more or less quickly on every side. Towards the N. the descent is regular and rapid.

Roy's remark regarding the peculiar position of the Bar Hill fort has already been quoted. Alone among the 'stations' on the Vallum it stands entirely detached. The others (so far as known) all abut directly on the great Rampart, which thus forms their northern bulwark. In this case the northern defences of the fort are entirely independent, although weaker than they would have been but for a consciousness of the formidable barrier that lay beyond. Fig. 3 represents the view from the inside of the N. gate. To left and right are visible the ends of the ditch of the fort, where it flanks the approach. From the gate an exploratory trench has been carried out to, and through, the Vallum, the southern kerb of which is, at this point, 120 feet distant from the outer kerb of the Rampart of the fort. The section made in the body of the rampart affords a glimpse of the great Ditch outside. In the intervening space can be seen the Military Way running westwards. Its southern margin is 78 feet from the outer kerb of the rampart at the gate.

In spite of the completeness with which the *opus valli* is described in

[1] This calculation is only roughly approximate, being based on the dimensions stated. It should be explained that, apart from the rounded corners, the outline of the fort was slightly irregular. The N. rampart was 15 feet longer than the S., the E. 6 feet longer than the W.

Fig. 2. The N. Gateway with the Antonine Vallum in the background.

the Glasgow *Report*, cited above, it may be well to record briefly the result of the cuttings made on the present occasion. Fig. 4 gives a near view of the section shown in the distance in fig. 3. It brings out very clearly the general structure of the Rampart itself—the stone base, 14 feet wide, with its carefully laid kerb on either side, and the layers of turf rising above it in regular courses. At this point the turf still stands

Fig. 4. Section across the Antonine Rampart.

4 feet high. Opposite the section the Ditch was found to be 14 feet deep, and to have a breadth of 40 feet—almost the maximum. The Military Way was laid bare for 140 lineal yards along the line seen in fig. 3. Fig. 5 gives a good idea of the general effect looking west. The road proved to be about 17 feet in width and excellently constructed. Its foundation was formed of a stratum of fairly large stones resting on a bed of wrought clay. This was surmounted by a convex layer of smaller stones, providing a surface whence the water must have drained

away quickly into one or other of the two gutters that ran along the sides.

The convex 'crown' just spoken of was a characteristic feature of Roman roads generally. On the exposed summit of the Bar Hill it must have been particularly useful. There is no spot on the line of the isthmus where the rain-clouds discharge themselves more freely—a fact that lends peculiar interest to an opinion formed by Mr M'Intosh, and

Fig. 5. The Military Way, looking W.

shared by the experienced labourers who did the digging. Certain indications which they noted have led them to believe that, when the fort was made, the whole of the space within the ramparts—if not also the ground lying to the north, as far as the Antonine Vallum—had been systematically stripped of turf and then covered with a layer of wrought clay from 7 to 8 inches in thickness. Such a layer would be impervious to rain, while the never-failing slope would effectually prevent the formation of pools. Dryness at all seasons would thus be ensured, and a coating of gravel or small stones would make walking

easy and comfortable. A precaution so eminently practical would be worthy of the best traditions of Roman engineering. So far, however, as the layer of clay is concerned, the evidence cannot be regarded as quite conclusive. Even if it be conceded that the clay within the camp differed markedly in appearance from the ordinary boulder clay of the surrounding fields, we have still to reckon with the constant going to and fro of human feet during perhaps thirty or forty years of actual occupation ; assuming that the loose surface soil had first been cleared away, we should expect such trampling to produce an effect not dissimilar from 'puddling.' Corroborative testimony may one day be obtained from other sites, for it is in the last degree unlikely that the Bar Hill fort would be unique. But, in the meantime, judgment must be suspended. On the other hand, the probability that the turf and the loose soil were removed seems very strong. It will be recollected that cut pieces of turf were used at some points for filling up the ditches of the Agricolan fort. This must represent a surplusage which could not be turned to account in any other way. The bulk would doubtless be absorbed in the construction of the new defences, in a manner which will presently be clear.

### *B. The Defences.*

(*a*) *The Rampart.*—The rampart, which constituted the principal defence of the fort, was built on precisely the same plan as the great rampart of the Antonine Vallum. That is, it consisted of a wall of turf resting upon a foundation of stone. The stone foundation proved to be intact for the larger part of the way round. It had a uniform breadth of 12 feet, and was formed of two parallel kerbs of dressed stones with a mass of rubble between. Owing to the slope, cutting had everywhere been necessary in order to obtain a level bed. Hence the inner kerb was always further below the modern surface than the outer one. On the north side, to the east of the gateway, where the ground is unusually steep, the foundation had been stepped, as is done with modern foundations, the outer half being 6–8 inches lower than the

inner one. Special care had been bestowed upon the rounded corners. At each of them the stones were larger and the rubble better laid, as if the superstructure were intended to be heavier. In all likelihood we have here an indication that the angles of the enclosure were fortified with towers, in accordance with the usual Roman practice.[1] One of the principal objects of such towers was to serve for the mounting of artillery. In the present instance they were probably of wood.[2] No other trace of their existence was observed, if we except the numerous ballista balls found scattered throughout the camp.

Fig. 6 will serve to illustrate the description just given of the stone foundation. It is a view of the N.E. corner, taken from the north-west, and it is interesting as showing that at this point the rampart was pierced by a well-made conduit, built of heavy, dressed stones, and having a width of 1 foot 2 inches. There was a similar conduit near the N.W. corner, but no corresponding provision could be discovered at either of the southern angles. The inner kerb is well displayed in fig. 7, which represents a longitudinal section of the western rampart, looked at from within the fort. Above the kerb can be seen a considerable portion of the original turf wall, with the familiar dark lines pencilled across its face. This and other sections were examined with particular attention. It was found that the dark lines, or carbonised strata, were generally about half an inch thick, and that they occurred at intervals of from 4 to 6 inches. These dimensions suggest that the layers of turf had been placed grass to grass,[1] a plan not uncommon to this day in the construction of turf fences. As a matter of fact, it sometimes proved practicable, by dint of cautious handling, so to separate the

[1] *Cf.* Hyginus, *De mun. castr.*, c. 58.

[2] *Cf.* the description quoted below from Arrian of the fort at Phasis (*infra*, p. 31).

[3] Otherwise the intervals between the dark lines would have been much smaller. It is true that Vegetius (iii. 8) gives 6 inches as the normal thickness of a sod cut for military purposes. But, even if the authority of Vegetius stood higher than it actually does, there would remain (1) the practical difficulty of cutting sods of such thickness in ordinary Scottish soil, and (2) the certainty that the original thickness, whatever it may have been, would be considerably reduced under pressure.

layers that one portion of the carbonised matter was lifted off, while the other portion remained behind. Even the original pieces of turf occasionally came away without difficulty, and then it appeared that the successive courses had broken joint. To judge by an excellent

Fig. 6. Foundation of Rampart, N.E. corner, showing Conduit.

section secured near the N.E. corner, the inner face of the rampart rose at an inclination of about 1 in 4.

(*b*) *The Gateways.*—The fort had the normal four gateways. Those on the N. and on the S. were 8 or 9 feet nearer the western than the eastern side of the enclosure. Those on the E. and on the W. were

Fig. 7. Longitudinal Section of W. Rampart, looking S.

respectively 138 and 137 feet distant from the inner kerb of the northern rampart. From the southern rampart the corresponding distances were 216 and 211 feet.[1] It follows that the *Portae Principales* were almost exactly opposite one another, but that the line of the *Via Principalis*, or street passing in front of the Praetorium, was some 76 feet nearer the *Porta Praetoria* than the *Porta Decumana*.[2] All four gateways were much of the same size, being from 12 to 14½ feet wide. That on the W. was decidedly larger than the rest.[3] That on the N. was singular in having a small conduit crossing it at an angle (see fig. 3), to carry the surface water from behind the rampart into the ditch on the west of the approach. At each of the gateways, except the southern one, there was found on either side, close to the stone base of the rampart, a line of three post-holes, placed from 3 to 4 feet apart and varying in depth from 2 to 2½ feet. Every one of the eighteen holes contained the stump of an oaken post, fixed in its place by stones rammed in hard beside it. In fig. 8, which gives a view looking out through the E. gateway, the three stumps on the right hand (which are in very fair preservation) have been taken out and planted on the ground, each beside the hole to which it originally belonged. The position of the holes themselves can be best appreciated by once again turning back to fig. 3, where there is a foot-rule lying between two of them. It will be noted how near they are to the end of the stone foundation.

It must not be supposed that these stumps are the remains of the actual posts of the gates. If that had been their character, the absence of holes at the southern entrance would have been inexplicable. Their true purpose was altogether different. It is practically certain that each of the gateways was flanked by wooden towers raised on the top of the rampart. It may be presumed that, at those entrances where the stumps

[1] It will be remembered that the E. rampart was 6 feet longer than the W. one. See *supra*, p. 16, footnote.

[2] This was the most usual arrangement; see the statistics collected by Dr Christison (*Proceedings*, 3rd series, vol. xi. p. 347).

[3] The exact figures are—N. gateway 13 feet, S. gateway 12 feet, E. gateway 12 feet, W. gateway 14½ feet.

Fig. 8. The E. Gateway, with the Castle Hill in the distance.

occur, the flanking towers were connected by a wooden gangway, passing over the top of the gate and supported on either side by stout posts of oak. It will be observed that the posts were not sunk so deeply in the ground as might have been expected from their size. This may indicate that they were trussed or strutted. Struts or a 'lining' would undoubtedly add to their effectiveness in respect of a secondary object which we may believe that they were meant to serve—the provision of a facing for the turf rampart at the points where it descended perpendicularly. In view of the character of the material, some such system of protection at those points would be essential. Otherwise the main defence would have tended to crumble away under the influence of natural causes.

The exception in the case of the southern entrance has still to be accounted for. Here, although there were no post-holes, there were distinct, if imperfectly defined, traces of stone foundations, just within the fort, on each side of the gateway. This entrance, therefore, was constructed in more elaborate fashion than the others. On the W. side the surviving foundations were sufficiently extensive to be the remains of a guard-chamber, and we may conclude that there was probably a guard-chamber on the E. side also. As for the wooden gangway, it was in all likelihood supported by solid masonry. A motive for such special precautions is easy to discover. The Antonine Vallum notwithstanding, the country lying to the rear had to be regarded as at least potentially hostile. The wild tribes inhabiting it were never thoroughly subdued. It is significant that the 'stations' at Ardoch and at Birrens both turn their faces southwards. And at Bar Hill, so far as the configuration of the ground was concerned, it was the S. side of the fort that was most exposed to danger of attack. The forces of the enemy could be massed only a short distance off, on the slope of Creecy Hill (see PLATE I.), while the intervening depression contains hollows where small bodies could rally for a sudden rush. That the engineer who designed the fortifications was alive to this weakness will be still more apparent when we come to describe the ditches.

Before we leave the gateways, a word may be added regarding the roads. It will be remembered that the Military Way, after passing through the Castle Hill Park, swept round to the N. to rejoin the Antonine Rampart.[1] Near the bottom of the slope of the Bar Hill proper, 110 yards away from the wall of the fort, it sent off a branch which led straight to the eastern gateway. This branch was only about 10 feet wide, and was not nearly so well made as the Military Way itself. A similar branch evidently united the Military Way with the N. gate. On the S., again, there were indications of a road running over the eastern shoulder of Creecy Hill. Whether this last was really Roman could not be determined with any certainty. If it was, it must have issued from the S. gate of the fort. On the other hand, it seemed clear that the western gateway had been but little used. Two ditches passed right in front of it without a break, and the earth that had been thrown out of them had lain virtually undisturbed. No sign of a road could be detected in the field beyond. Indeed, a road here would have been superfluous. The obvious line of communication westwards was the Military Way, and that could more easily be reached by the road connecting it with the N. gate.

(*c*) *The Ditches.*—The fort was defended on three sides by a double ditch. On the N., in view of the extra protection afforded by the Antonine Vallum, a single ditch was deemed sufficient. At each of the northern angles, therefore, the two ditches coming from the S. united as soon as they had fairly rounded the corner. On all sides save the W. there were breaks opposite the gates, to permit of the passage of the roadway. On the E. and on the S., where the ditches were double, the break was effected by making the outer ditch return at right angles upon the inner one. Except for these interruptions, the circuit was continuous. The peculiarity presented by the W. gateway can be readily explained. In the absence of a road, it did not seem worth while filling up the Agricolan ditch, which at this point coincided with the line of

[1] See *supra*, p. 404.

the inner ditch of the Antonine fort. Accordingly, that ditch was widened somewhat, to adapt it to its new surroundings, and at the same time a second ditch, the outer one, was dug parallel to it all the way along. While the twofold barrier thus created would add to the strength of the gate, it would not prevent its being used for a sally. In an emergency a bridge of planks could easily be improvised.

The ditches were all cut upon a uniform general plan. On leaving the surface, scarp and counterscarp sloped inwards as if destined to meet and form a V. The initial angle of descent ranged from 30° to 40°. But the actual meeting never took place. About 18 inches above the

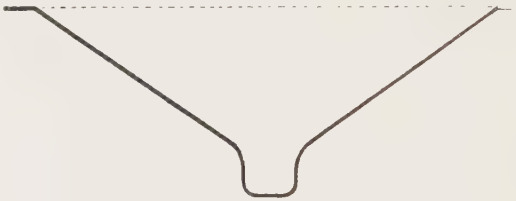


Fig. 9. Section showing shape of Ditches.

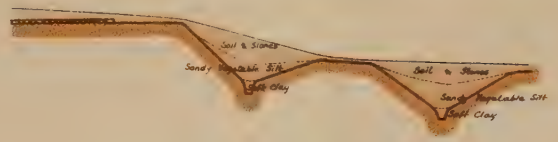
lowest level, the two sides suddenly became perpendicular, as indicated in fig. 9, the result being to provide a flat bottom, sometimes as much as 2 feet broad, sometimes no more than 8 inches. Such a device would render the trenches most difficult things to get out of, and we cannot but suppose that this accounts for its adoption.[1] If the width at the bottom varied, so did the width at the top. In this latter respect the differences between the different ditches are particularly interesting. They can be most simply shown by the following table, which should be compared with the illustrations given in PLATE IV.

[1] Something of the same sort has been noted on the line of the English Wall, in the case of the ditch attached to the Turf Wall at Appletree (*Trans. of the Cumb. and West. Ant. and Arch. Society*, xiv. 187).

# BARHILL FORT. CROSS SECTIONS OF DITCHES

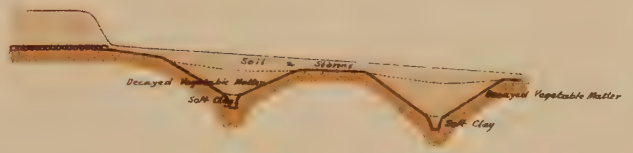
C. S. Nº I
WEST OF NORTH GATEWAY.

C. S. Nº II.
EAST OF NORTH GATEWAY.

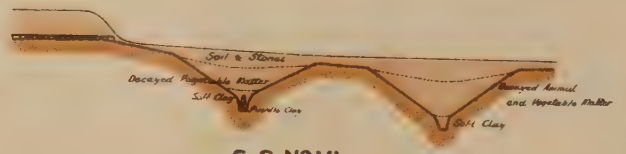



C. S. Nº III.
NORTH OF EAST GATEWAY.

C. S. Nº IV.
SOUTH OF EAST GATEWAY




C. S. Nº V.
EAST OF SOUTH GATEWAY.




C. S. Nº VI.
WEST OF SOUTH GATEWAY.

C. S. Nº VII.
SOUTH OF WEST GATEWAY.

C. S. Nº VIII.
NORTH OF WEST GATEWAY.

Geo Waterston & Sons, Lith, Edinburgh.

## CROSS-SECTIONS OF DEFENCES

### TABLE OF WIDTHS [1]

| | Rampart | Berm | Ditch | Interval | Outer Ditch | Total |
|---|---|---|---|---|---|---|
| North . . . . | 12 feet | 6 eet | 20 feet | ... | ... | 38 feet |
| South . . . . | 12 ,, | 7 ,, | 16 ,, | 6 feet | 17 feet | 58 ,, |
| East . . . . | 12 ,, | 8 ,, | 16 ,, | 6 ,, | 16 ,, | 58 ,, |
| West . . . . | 12 ,, | 8 ,, | 16 ,, | 9 ,, | 13 ,, | 58 ,, |

It will be seen that only one element is absolutely constant—the breadth of the stone base of the rampart. If, however, we leave out of account the N. side, with its single ditch, we find two other features that do not change—the breadth of the inner ditch, and the total measurement from the kerb of the rampart to the further margin of the outer ditch. The differences, therefore, can hardly be altogether haphazard. How are they to be explained?

The exceptional width of the *fossa* on the N. was obviously due to the fact that it was the only defence of the kind on that face of the fort. On the remaining three sides the breadth of the outer ditch appears to have been determined by the character of the ground lying beyond. Towards the W. this was open. A limit of 13 feet was accordingly deemed adequate. It was otherwise towards the S. Attention has already been directed to the peculiar danger to which the defences there lay open. A consciousness of such danger is reflected in the formidable nature of the outer ditch, which was $8\frac{1}{2}$ feet deep, and fully a foot wider than the inner one. We may trace evidence of the same feeling of

[1] The figures are taken from sections (see PLATE IV.) very carefully made—two on each side, at the points indicated in PLATE II.—for the express purpose of securing accurate measurements. At the same time they ought to be regarded merely as reasonable averages. The lines of the ditches were not drawn with mathematical exactitude.

insecurity in yet another precaution. The gap admitting the road from the S. was completely 'covered' by a short ditch or *titulus*, some 30 feet long, 12 feet broad, and 7 feet deep—an effective check to the force of a direct charge. Similar care was called for on the E. There the rampart overlooked the green basin of the Castle Hill Park. At first the slope was gradual. After 30 or 40 yards it became steeper, and at one part the descent was sufficiently abrupt to conceal a portion of the hillside from the view of the defenders. Special measures were taken to cope with these conditions. On the E. the outer ditch was 3 feet wider than on the W., while the gateway was 'covered' just as was the gateway on the S. The covering ditch, however, was not a mere *titulus*; it was too large for that.[1] Beginning opposite the gateway, 25 feet from the outer ditch, it ran parallel to the main ditches for a distance of 93 feet towards the S. It is significant that it occupied the crest immediately above the expanse of 'dead' ground that has just been referred to. An attacking party emerging from the hollow would have found themselves immediately confronted by an obstacle not less than 14 feet wide and 6 feet deep.

Finally, it may be noted that the depth of the ditches was by no means uniform. The outer ditch on the S. side represented the maximum ($8\frac{1}{2}$ feet). The average all over was from 1 to $2\frac{1}{2}$ feet less. Even in the case of the same ditch there were sometimes very considerable variations. On the W., for example, for a distance of some 20 feet in front of the W. gateway, the two ditches were no more than $3\frac{1}{2}$ feet deep. This was on or near the summit of the hill. Lower down, they made a much closer approach to the average. Similarly, the single ditch on the N. was $7\frac{1}{2}$ feet deep beside the gateway, but more than 8 feet at its western end. The lack of uniformity as between different ditches, and even (occasionally, at least) as between different parts of the same ditch, was partly the result of subsequent levelling of the ground. But it may also have been largely due to the varying requirements of defence; where the

[1] *Per latitudinem portarum similiter fossa fiet, quod propter brevitatem titulum cognominatum est* (Hyginus, *De mun. castr.*, c. 49).

danger was greatest, the ditch would be dug deepest. Convenience for purposes of drainage was probably also a regulating factor. In this connection it should be observed that the only overflow drain that could be discovered was one that ran due N. from the N.W. corner, the lowest point of the whole enclosure. And here the primary object was to carry off the sewage of the fort in the direction of the great Ditch of the Vallum. At the other corners the engineers seem to have depended on the drying influences of nature. Normally, of course, the ditches of the fort were intended to be free of water. Yet during heavy rain they must often have contained a large accumulation, and there is no more striking proof of the pains bestowed upon their construction than the special means taken to protect the two corners that were lowest and, therefore, chiefly exposed to risk of damage —those at the S.W. and the N.W. respectively. It is towards these points that the fall of the ground is most rapid, and it would be the ditch nearest the camp that was most liable to sudden flooding. In the centre of that ditch, at each of the corners named, there rose a solid bank of wrought or 'puddled' clay, 35 yards in length round the curve, $2\frac{1}{2}$ feet in height, 2 feet wide at the bottom and 1 foot wide at the top. When the loose earth was cleared away by the excavators, these banks were found intact.

In the light of the descriptions just given, it will not be hard to conjure up a picture of what the outward appearance of the Antonine fort must have been while it was entire. That picture would be typical of most of the second-century Roman forts in North Britain. And it may be interesting to compare it with the following verbal sketch of a frontier post in quite another portion of the Empire. In his *Periplus of the Euxine Sea*,[1] Arrian, then governor of Cappadocia, thus writes to his master Hadrian regarding the 'station' at Phasis, the most easterly city on the Black Sea coast:—"The fort itself, which is garrisoned by 400 picked troops, occupies a position which appeared to me at once very

[1] Cap. 12.

strong by nature and admirably calculated to secure the safety of those approaching the town by sea. Two ditches run round the rampart, both of them broad. Formerly the rampart was of earth and the towers planted on it were of wood. Now both rampart and towers are made of brick. The former rests on a substantial foundation, and has artillery mounted upon it. In a word, the preparations for defence are so complete that there is little likelihood of any of the natives coming to close quarters or of the garrison ever being called upon to stand a siege."

From the point of view of construction, the fort on the Bar Hill and that at Phasis both belong to a period of transition. Ramparts of turf and ramparts of brick were alike intermediate between the earthwork, pure and simple, and the wall of stone. But the stages they represent should perhaps be regarded as parallel rather than as successive. As a matter of fact, the Phasis fort, with its brick ramparts, was the earlier of the two (*circa* 130 A.D.). That the alternative material was employed at Bar Hill, as it was elsewhere in North Britain, was in some degree the result of accident. Bricks would have had to be made, whereas turf of excellent quality lay ready to hand upon the spot.[1] If we allow for this difference, the resemblance between the two *castella* is exceedingly remarkable. It may have extended even to their size. According to the basis of calculation laid down by Hyginus, 21,600 square feet were required for the housing of an infantry cohort of 480 men. Measured by this criterion, Bar Hill could have held 1400 or 1500 men, even assuming that only half of the available ground was occupied by barracks. But the specifications of Hyginus refer to the temporary camp of an army on the march, where economy of space was a consideration of importance; it is futile to try and apply them to a permanent 'station.' On the reasonable supposition that the Bar Hill fort was designed for the comfortable accommodation of a recognised military

[1] Mr Haverfield (whose unwearying assistance we would take this opportunity of acknowledging) points out to us that there is another consideration to be weighed: the East was probably ahead of the West.

unit, common sense would suggest that its normal garrison was a single cohort, 480 strong. It may have been more or less according to special circumstances.

### *C. The Interior Arrangements.*

When we turn from the defences of the Antonine fort to examine what lay behind them, we find the wreckage much more fragmentary. The raider, the drainer, and the ploughman have done their work thoroughly, according to their lights. Of all that came within their ken, they have left but little for the archaeologist. There is one notable exception. As we shall see by and by, the evidence suggests that it is to the destructive energy of one of the earliest bands of spoilers, whether Roman or Caledonian, that we owe the great accumulation rescued from the Well. But for this, the harvest of structural remains would have been singularly poor. At the best, any conception we can form of the once busy interior will be blurred and defective. Yet some features of interest ought to stand out with tolerable clearness. The Headquarters Building was in every sense the most important, and with that we shall begin.

(*a*) *The Praetorium.*—The Praetorium—or, as it might perhaps more correctly be termed, the Principia[1]—occupied the usual position in the centre of the fort, and faced north. When Mr Whitelaw's excavations commenced, no trace of it was visible. Eventually, however, its main outlines were recovered, thanks to the substantial manner in which the foundations had been constructed. The method of the Roman builder had been as follows. As a commencement, a deep trench, from $2\frac{1}{2}$ to 3 feet wide, was dug along the proposed line of wall. The bottom of this was filled, to the depth of about a foot, with wrought clay. Into the clay there were driven a number of small stones from 3 to 4 inches in diameter. Upon the *statumen* so formed, a course of rough rubble was

[1] See the inscription from Rough Castle, published in the last volume of the *Proceedings* (1905, vol. xxxix. pp. 470 and 472). The building also gave a name to the street upon which it opened, the *Via Principalis*,—'*quae a principiis nomen obtinet*' (Hyginus, *De mun. castr.*, c. 14).

laid. Above that came a course or two of dressed stones, and then—the real beginning of the wall—a fresh course of stones, better dressed, and so much narrower than the lower one as to leave a scarcement of

Fig. 10. E. Wall of the Praetorium, looking N.

3 inches on either side. Fig. 10 will serve to illustrate some of the points just mentioned. It is a view taken from the interior, looking N., and represents the most southerly portion of the E. wall, with the end of one of the cross-walls abutting on it.

A good idea of the ground-plan can be formed by a glance at fig. 11. The usual width of the foundations was $2\frac{1}{2}$ feet, but the foundation of

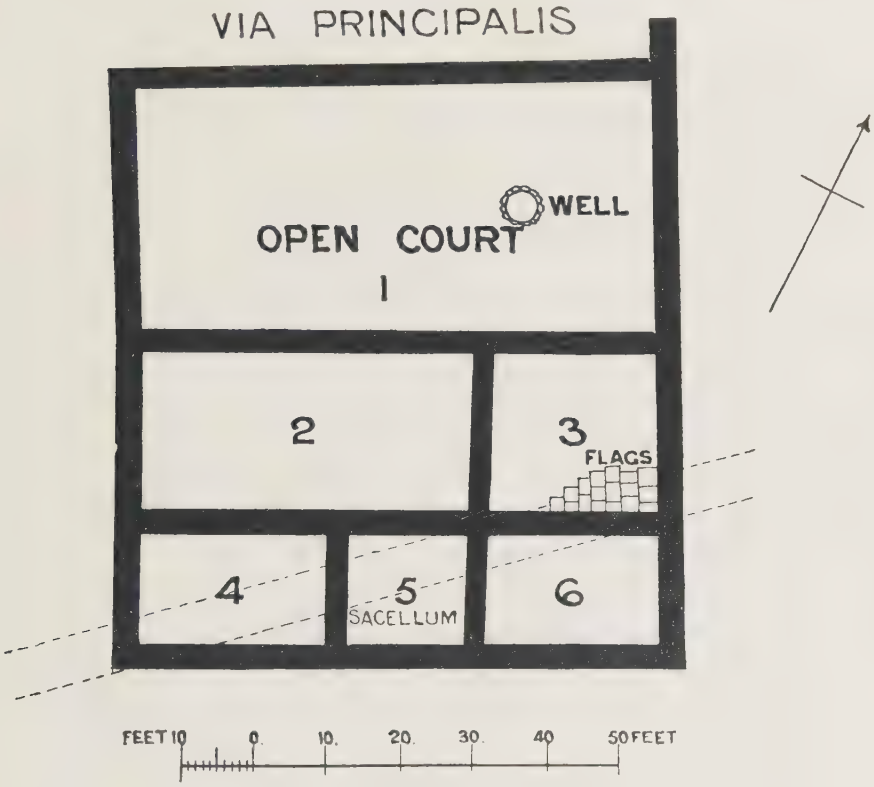



Fig. 11. Ground-plan of the Praetorium.

the S. wall was 3 feet wide. It will be observed that the structure, which had an outside measurement of 83 feet long by 77 feet broad,[1]

[1] The 6-foot projection shown on the Plan at the N.E. corner was not a buttress. The slope towards the E. was steep here, and a line of large stones had been laid down to protect the gutter and roadway beneath them.

consisted of three main divisions. The most southerly of these contained three separate chambers (Nos. 4, 5, and 6). To what extent the division in the centre was broken up is doubtful. But the one towards the N. had certainly no partition walls. Although all traces of the doorway have disappeared, we cannot doubt but that the entrance was from the N.—in other words, direct from the *Via Principalis*. And we may be sure that the door was in the centre, so that, when the soldier crossed the threshold, his eye might travel straight along a vista to the central chamber on the S. This little apartment (No. 5), $15\frac{1}{2}$ feet square, was the *sacellum* or shrine, where the standards were kept—the sanctuary consecrated to their worship and to that of the Imperial House. Usually the *sacellum* had two rooms—probably business-rooms of some sort—on either side of it, making a row of five in all. But the seeming use of only three can be paralleled from elsewhere—from Hardknott in Cumberland,[1] for example, from Melandra in Derbyshire,[2] and apparently from Rough Castle.[3] In the present instance the two side apartments were considerably larger than the one in the middle. The back walls of Nos. 4 and 6 measured 25 feet and 24 feet respectively, as against $15\frac{1}{2}$ feet in the case of No. 5. All three rooms appear to have been paved with freestone flags, from 2 to 3 inches in thickness.

When we leave the part of the Praetorium lying to the S. and pass to that in the centre, the task of interpretation becomes much harder. To judge from analogies at Birrens, Housesteads, and elsewhere, an open court might have been confidently expected. But the evidence against such a view appears to be conclusive. The eastern end would seem to have been a separate room, about 22 feet square, and paved with flags. The dividing wall and the remains of the floor were unmistakable. Some of the flags still *in situ* are shown in fig. 12, which gives an outside view

[1] *Trans. of the Cumb. and West. Ant. and Arch. Society*, vol. xii. p. 386.

[2] *Melandra Castle* (Manchester, 1906), Plan ; and also *Victoria County History of Derbyshire*, vol. i. p. 212.

[3] *Proceedings*, 1905, vol. xxxix. p. 472.

of the wall already reproduced in fig. 10. Whether there had been a corresponding room at the western end, it was impossible to determine

Fig. 12. E. Wall of Praetorium, with remains of Paving, looking N.

definitely. No positive indications were observable, and in such a case considerations of symmetry can hardly be allowed to carry weight. On the other hand, it is not unimportant to observe that a division of No. 2, in the manner just suggested, would have provided the

normal number of four business-rooms in close proximity to the *sacellum*.[1]

A peculiar interest was associated with the S.E. corner of Room No. 3. The southern end of the Praetorium was partly built over the inner ditch of the Agricolan fort. As the dotted lines in fig. 11 show, the line of the ditch enters below the S.W. corner of Room No. 4, passes across this and across the *sacellum* in a north-easterly direction, runs under the dividing wall between Room No. 6 and Room No. 3, and then under the flags in the S.E. corner of the latter, finally emerging just beyond. Where the actual foundations were to be laid above it, the bed of the early ditch has been packed with broken freestone, instead of being merely filled with earth or turf. But even this precaution has not proved sufficient. At some time or other, probably soon after the erection of the building, there has been a marked subsidence on the line of the dividing wall chiefly concerned, and the flags in the S.E. corner of Room No. 4 have also sunk considerably. These phenomena are well exhibited in fig. 13, which gives a view of the wall and flags, looking E.

The general character of the front or northern division of the Praetorium was not difficult to determine. It had been an open courtyard, about 70 feet by 34 feet, apparently floored with clay and a stratum of small stones. In its eastern half was the Well, whose discovery and clearance have already been described. This well, it will be remembered, was 43 feet deep and 4 feet in diameter, and was 'cradled' all the way down with dressed stones. The lowest course of the 'cradling' rested on five well-squared oaken beams arranged in the form of a pentagon. Examined from above, the whole produced a strong impression of the thoroughness and durability of Roman workmanship. It is fair to add that some, at least, of those who ventured to the bottom experienced a rather different sensation as they looked up and saw the

[1] The same end might, of course, have been attained by the use of wooden partitions in No. 4 and No. 6. And such an explanation of our difficulty would have much to commend it. The W. wall of No. 3 would remain a very puzzling fact.

bulging sides project in clear relief against the small circle of bright sky. The contents—a full record of which is reserved for the Appendix—furnished important evidence as to the original appearance of this part

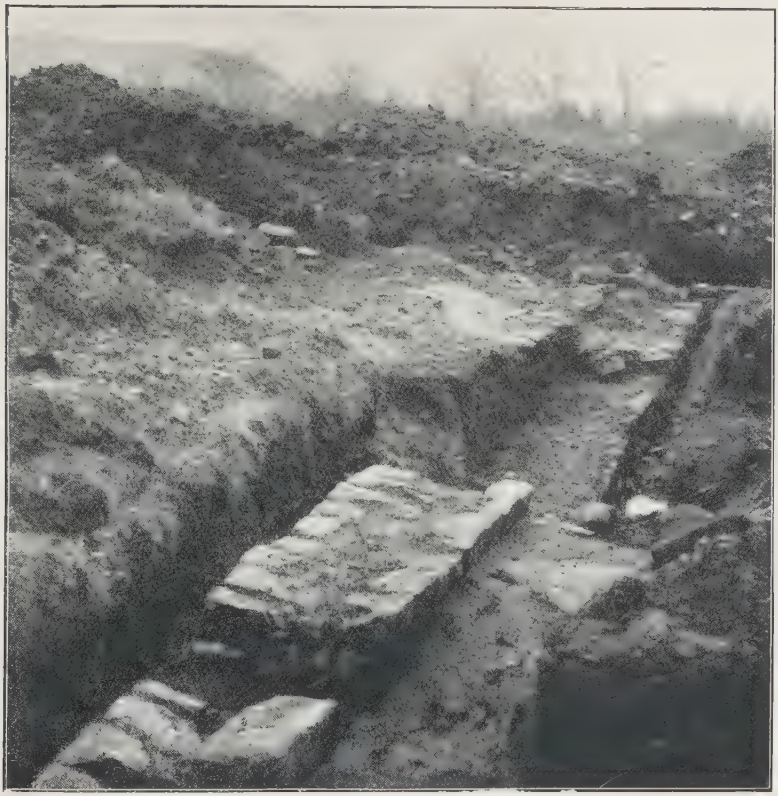


Fig. 13. Partition Wall in Praetorium, showing subsidence on line of Agricolan Ditch.

of the fort, a centre where officers or soldiers must often have foregathered.

It is certain that a colonnade of stone pillars ran round at least a portion of the open court. Careful search was made for the sub-

structures on which the bases must have rested, but all trace of them had vanished. The proof supplied by the extant remains is, however, convincing. These will be subjected to detailed examination at a later stage.[1] In the meantime a general statement must suffice. There were extracted from the Well 21 columns or pieces of columns, 14 bases, and 11 capitals. A twelfth capital was subsequently recovered from the refuse-hole distinguished on the Plan as No. 7. Placed end to end, the columns would cover a distance of 64 feet. Their diameters averaged from 10 to 13½ inches, and each of the three tallest was rather more than 5 feet high. A characteristic group is reproduced in fig. 14. The bases were fairly uniform in appearance; but there was some variation among the capitals, a few of them being decorated.

Next to the colonnade, the Well itself was probably the most conspicuous feature of the courtyard. It was worked by means of a rope running on a wooden pulley. Parts of the bucket and of the pulley, as well as of the wooden framework to which the latter had been fastened, were among the 'finds' of special interest recovered from its depths. The debris from the Well also included a good many bits of squared oak, one of them as much as 9 feet long,—remains which might suggest that the framework had been protected by a wooden shelter. That is, of course, quite possible. But it is more probable that the beams in question had formed part of the roof of a covered walk inside the colonnade.

(*b*) *The Storehouse.*—Immediately to the E. of the Praetorium was a street, running N. and S., and having a width of 10 feet between the inside margins of its two stone gutters. On the other side of this street rose a long, narrow building of stone, which may with confidence be identified as a storehouse. Its foundations lay parallel to those of the Praetorium, and were just about equal to them in length (85 feet). One or more such structures have been found in every Roman fort in Britain that has been explored with any degree of completeness. They are generally situated in the immediate neighbourhood of the head-

[1] See *infra*, "Note on the Architectural Fragments."

Fig. 14. Shafts of Pillars, recovered from the Well.

quarters building. The grounds for supposing them to be granaries or storehouses have been well stated by Mr Bosanquet in his account of the excavations conducted under his supervision at Housesteads.[1] In some respects the Bar Hill example represents a departure from the normal type. In particular, its outside walls were less thick than is usual —being only about 2 feet—and they were *not* supported by buttresses. Again, compared with the great majority of similar structures elsewhere, it was remarkable for its relative breadth (32 feet). With a length of 85 feet, we should not have expected it to be more than from 20 to 25 feet wide.[2]

A stone partition divided the Storehouse longitudinally into two slightly unequal halves. Probably this is the explanation of the peculiarities just enumerated. If there were to be two divisions, the whole would require to be broader than is usual. On the other hand, the partition could be so utilised as to relieve the side walls of much of the pressure of the heavy roof with which we must suppose the granary to have been provided. Buttresses would thus be rendered unnecessary. Of the two halves, the eastern was the larger. It had an interior width of 13 feet, and had evidently been paved with flags, as pieces of flagstone were found lying undisturbed in the bottom. The western half was only about 11 feet wide. Its floor was doubtless also formed of flags. In this case, however, recourse had been had to a method of construction that is frequently associated with such buildings. In order to guard against damp, the flags had been supported by three dwarf walls that ran from one end of the division to the other. A good many ashes were observed in the northern portion of the free spaces so provided, but there was nothing to indicate when or how they had accumulated there. About 17 feet from the N. end were traces of what appeared to be a cross wall. It became obvious during the excavations that the two most easterly of the dwarf walls, taken along with the stone partition,

[1] *Arch. Ael.*, xxv. pp. 237 f.

[2] See Bosanquet, *l.c.* His statistics are entirely borne out by sites examined since the publication of his paper, *e.g.* Castlecary, Rough Castle, and Gellygaer.

Fig. 15. The Storehouse, looking S.

represented the "three rows of ruins" shown very prominently in Gordon's plan, and spoken of by Horsley as being still visible "within the Praetorium."[1] Fig. 15 gives a view, looking south, of the northern end of the "three rows," as they appeared when uncovered in 1903. The third dwarf wall and the main wall on the W. are barely distinguishable. Towards the right the stone gutter on the E. side of the street is very well seen.[2]

(*c*) *The Workshops.*—To the E. of the Storehouse were the remains of yet another building of stone. It had been sadly mutilated. None of its details were ascertainable. Even the limits of its foundations could not be certainly fixed, although it must have covered an area of not less than 41½ feet by 33 feet. The fact that it had contained the workshops seemed tolerably clear from the nature of the objects found within what was left of its walls. These included quantities of ashes and other indications of large fireplaces, the remains of flues, many pieces of wrought iron, a number of iron nails, and—most significant of all—much iron-slag and glass-slag. Near the S.W. corner a well-preserved flue entered the building from the E.

(*d*) *The Baths and Latrines.*—After the Praetorium itself, the most extensive stone structure discovered was a range of buildings that stretched nearly the whole way from the N. gate to the N.W. angle of the fort, at a distance of not more that 4 feet from the rampart. Measured over the foundations, it was about 15 feet broad, and rather less than 150 feet long. The general view, looking eastwards (fig. 16), conveys a good impression of its dilapidated condition. While it had evidently been a continuous suite of apartments, three clearly marked divisions had existed. Before entering on a particular description, we may mention that the N. ditch, opposite the two higher or more easterly

[1] See *supra*, p. 407.

[2] The pool of water in the centre of the foreground marks a hole dug to verify the line of the Agricolan ditch.

Fig. 16. General View of Latrines and Baths, looking E.

divisions, contained many fragments of small clay bottles such as might have been used for holding unguents, and also that in the very same neighbourhood, but on the inner side of the rampart, there were picked up five loose coins—one of silver and four of copper—as well as broken and corroded pieces of several others. These facts are in complete accord with an inference to which the character of the ruins themselves will be found to point. They indicate that a good deal of money changed hands in or about the building, and that some of the rooms were devoted to purposes connected with the toilet. In other words, they suggest that what we have here is the wreck of the public baths and their ordinary adjuncts.

An examination of the internal arrangements renders the conclusion a certainty. The division next the gate yielded quantities of stones, ashes, burned wood, and broken pottery of the coarser sort. Its lower portion was furnished with a hypocaust, the brick pillars of which crumbled away rapidly when exposed to the frosty atmosphere. Much cement had been used in its construction; many large pieces nearly as hard as stone were among the fragments. It must have been a *caldarium* or a *tepidarium*, or both, for it had had a regular water-supply laid on. The waste was carried off at the back by a drain, 6 inches wide and 15 inches deep. The fresh water came from a reservoir or tank that stood on a slightly higher level, about 23 feet to the S. of the eastern extremity of the main building. Fig. 17 represents this Reservoir, looking N., with the ruined hypocaust in the distance. It will be seen that it was a rectangular pit, 12 feet long by 6 feet wide. There was a step across the centre of the bottom, the western half being 3 inches lower than the eastern. The sides had originally been protected by masonry, and the floor was roughly paved with stones laid on a well-packed bed of puddled clay. The whole had at one time been covered by a roof or canopy, as was proved by the discovery of the stump of an oaken post in each of the four corners. Had these posts been sunk deep enough to give them a hold at once secure and independent, they would have penetrated the puddled clay and so caused a leakage. Accordingly, they were merely

Fig. 17. Reservoir for the Baths, looking N.

planted on stones lying above it. The necessary support or 'bracing' was provided by tenon-struts mortised into them about 6 inches from their lower end. In the illustration the mortise-hole can be distinctly seen in the stump that is leaning against the left-hand corner of the northern wall of the reservoir. The channel-stone just to the right is lying in its original position, and was evidently the outlet. The three similar stones in the foreground were got face downwards in the bottom, as if they had been thrown in by hands intent on destruction. Probably they formed the inlet.

Returning to the Baths, we find that the division in the centre was likewise provided with a hypocaust. This was on a somewhat lower level than the one already spoken of, and its pillars were of stone, not of brick. The mouth of the furnace and some of the pillars are shown in fig. 18. In one or two instances the flagstones of the floor are still poised upon the top. The confused heap beyond represents the remains of the upper hypocaust. It was remarked that the centre division had had no communication with the drain that passed immediately behind it. It was not, therefore, used for bathing in the strict sense of the term. But its position as a member of the suite goes to prove that it was the bathers who frequented it. Possibly it was a *Laconicum* or sweating-room. Or it may have been merely a comfortably warmed apartment for dressing or undressing, and for lounging. Or it may have served both purposes, as did the *apodyterium* in Quintus Cicero's villa near Arpinum.[1]

Regarding the nature of the lowest or most westerly division there can be no manner of doubt. It contained the Latrines. These were situated at the precise point in the fort where the fall of the ground was most rapid. Turning back to fig. 16, and comparing it with the Plan on PLATE II., we may note the system of drainage. A stone gutter ran all the way in front of the other two divisions. It probably collected the rain from the roof. Immediately below the furnace of the stone hypocaust it was diverted towards the N. and taken obliquely through the wall into the Latrines—possibly an indication that the latter had

[1] Cicero, *Ep. ad Quintum Fratrem*, III. i. 2.

Fig. 18. Remains of Stone Hypocaust in the Baths, showing Mouth of Furnace, looking E.

no roof for rain to drip from. The drain that carried off the waste from the upper portion of the Baths was the main source of the water used for flushing purposes. During nearly its whole course it was closed in with stone covers. About 20 feet from the W. wall of the building it sent off a branch that crossed the lowest division at an angle towards the S.W., and then turned northwards to fall once more into the main stream. This branch (which, as the illustration shows, had also been partially covered) formed the actual latrine trench, and the outflow of sewage was ultimately led through the N. ditch by a conduit raised a little way above the bottom. The stone with a perforated hole, in the foreground of fig. 16, is a somewhat curious relic. It was found on the top of the latrine trench, just where it lies in the picture, and it shows that the seats were of stone.

(*e*) *Other Buildings of Stone.*—More or less doubtful indications of other stone buildings came to light here and there; but there was nothing that could be called definite or certain. And there was at least one remarkable blank. There was no evidence to show what had lain in the western section of the *latera praetorii*—the space corresponding to that occupied by the Storehouse and the Workshops on the E. It would be a natural enough situation for the private quarters of the commandant of the garrison. This would probably be a stone house, with hypocaust installation underneath some of the floors. The supposition that such a house was among the buildings that once stood here may perhaps help us to find a clue to their utter disappearance. The "vaults . . . . covered above with flat bricks," which are mentioned in the old *Statistical Account of Scotland*,[1] were undoubtedly hypocaust chambers. They are described as being "still entire" when accidentally revealed in 1791. Unless they were speedily and carefully buried again, their destruction would inevitably follow. That they were so destroyed is all the more likely, if their discovery was associated with a search for stones or with an endeavour after agricultural improvement.

[1] See *supra*, p. 408.

(*f*) *The Wooden Barracks.*—The outstanding features of the rest of the area of the fort—*praetentura* and *retentura* alike—were the barracks of the soldiery. These were long, narrow buildings, corresponding in a general way to the *hemi-striyia* of Hyginus.[1] At Bar Hill, in accordance with the most usual custom, they lay parallel to the *Via Principalis*. As at Ardoch, they were of wood. No sleeper-tracks were observed; but the number of post-holes recorded was considerable.[2] Close upon 150 of the latter will be found marked upon the Plan (PLATE II.). With a diameter of about 2 feet, they were usually from 2 to 3 feet deep. In nearly every one of them was found the end of a round oaken post, which had been carefully wedged in position with stones. The stumps indicated an original diameter of from 6 to 8 inches, and the tallest surviving fragment was about 3 feet high. They had usually a charred appearance on the top, as if the original posts had been destroyed by fire. Even where a continuous line was secured, the distances between the holes tended to be rather irregular. Sometimes the interval was as much as 7 to 8 feet, sometimes it was only 2 or 3. The vista reproduced in fig. 19 will illustrate most of the points just mentioned. It shows the longest series, looking westwards. For the purpose of the photograph the stumps have been removed from the holes, and set up upon the ground.

Beyond the bare facts stated above, there is not much to be said about the Barracks. The material is too scanty to justify any but the most general conclusions. We cannot even say how many separate blocks there were. The *retentura*, or southern portion of the fort, contained indisputable vestiges of three, numbered III., IV., and V. upon the Plan. We may be sure that there was a fourth close beside them. It is hardly likely that there were any others. In the *praetentura* the remains were far less abundant. Only two wooden buildings—numbered I. and II. upon the Plan—could be positively located north of the Praetorium, and

[1] See Mr Bosanquet's luminous discussion in *Arch. Ael.*, xxv. pp. 228 ff.

[2] For an explanation of the two methods of construction, see Mr Cunningham's sketches in the Ardoch Report (*Proceedings*, 1898, vol. xxxii. pp. 445 f.)

Fig. 19. Line of Post-holes, with remains of Wooden Posts, looking W.

one of them was represented by but five post-holes. At the same time, the space available here was much more extensive, and the measurements lead one to suppose that in this quarter there must be not less than three wooden buildings altogether unaccounted for. That would give a total of at least nine for the whole fort, the odd number being explained by the intrusion of the Baths.

The best preserved of the Barrack Blocks was the one that lay in the extreme S.W. (No. V.). If we include all the post-holes that appear to have belonged to it and to its adjuncts, we get a length of 123 feet and a breadth of 31 feet—a fairly close approximation to the dimensions given by Hyginus for the equivalent unit in a temporary camp (130 feet by 30 feet). It can, however, be proved that the actual building was not quite so large. Fig. 20 is a view, looking eastwards, along the more northerly of the two longest rows of holes that marked its outline. Observe the line of stones set up on edge behind the posts. The purpose of these was obvious. The building lay upon a slope, and the stones were intended to prevent the water that ran down the hill from making its way beneath the wall. This, therefore, was the true back. Measured from here to the front, the breadth was 24 to 25 feet. Similarly, measured from the western extremity of the line of stones, the length was not more than 110 feet. It was only 87, if the most easterly of the three cross rows represents a verandah and not a partition. The acceptance of the last hypothesis would deprive us of any evidence for a division of the building into compartments. But the original existence of such compartments would remain beyond doubt. The testimony from other sites is decisive. Incidentally, the stones set on edge furnish proof that this block of barracks faced towards the S. That was a marked advantage. In the case of a sudden alarm, it would be the work of a moment to man the southern rampart.

The vista of fig. 19 exhibits almost all that was left of the two more northerly of the Barrack Blocks in the *retentura* (Nos. III. and IV.). It is taken from the eastern end. Although the post-holes seem, in the illustration, to stretch in an unbroken line, there is really (as the Plan on

PLATE II. will show) a gap of some 23 feet in the centre, marking the

Fig. 20. Post-holes and Stones set on edge at back of Barrack Block No. V., looking E.

passage of a roadway from the S. gate. Judged by the holes, the two different buildings thus represented would appear to have been respec-

tively 113 and 115 feet long. Regarding their breadth we cannot speak positively. There were, however, clear indications that it was towards the Praetorium that they extended; other post-holes were found to the N. of both halves of the line. The doubling of the row at the eastern end of what would thus be the S. wall of No. IV.—a feature distinctly reproduced in the figure, and still better seen in the Plan (PLATE II.)—can be interpreted with some approach to confidence. It would appear probable that the building had been L-shaped, with a verandah at the end, much like certain of the stone barracks at Gellygaer and at Chesters.[1] If this was so, the verandah must have been almost 4 feet wide and between 40 and 50 feet long. The meagre remnants of barrack blocks in the *praetentura* have little to tell us. One building (No. II.), part of whose outline is traceable on the E., had been 22 feet broad. With the five solitary post-holes on the W., which are all that is left of No. I., there was associated a curious hole or pit, 5 feet long, 4 feet wide, and 5 feet deep. At the bottom of this was a trough made of four flagstones set on edge round a fifth flagstone that lay flat. These were held in place by stout wooden stakes. The trough so formed was 8 inches deep, 2 feet long, and 1 foot 3 inches broad. It may have been connected with the mess-kitchen which, following the usual arrangement, would probably occupy one end of the building to which the five posts belonged.

(*g*) *The Streets.*—We have already had occasion to mention that a street, 10 feet wide, divided the Praetorium from the Storehouse. Allusion has also been made to the *Via Principalis*. Considerable traces of the latter could be distinguished; its eastern half must have been one of the best-trodden portions of the fort. The same remarks apply to the *Via Praetoria*, which led from the courtyard of the

[1] See *The Roman Fort of Gellygaer*, pp. 65 ff. Three buildings of this shape were also found at Camelon. There, however, no verandahs were traced. In all these instances the narrower end of the building pointed inwards. At Bar Hill, if the structure was similar, it pointed outwards.

Praetorium straight to the N. gate. Again, the arrangement of the wooden barracks in the *retentura* undoubtedly points to the existence of a now vanished street that had passed from the S. gate to the back of the Praetorium. Besides these four, the only other which we can identify with certainty was one that ran round the interior margin of the southern defences, occupying (so far as that side of the fort was concerned) very much the position held by the *Via sagularis* in the temporary camp of Hyginus. Its remains are shown on the right in fig. 21, at the spot where they were most extensive. The post-holes on the left of the illustration belong to the S. front of Barrack Block No. V., the view being taken from the W. The street itself was 7 to 8 feet wide. Towards the W. its outer kerb was about 17 feet behind the inner kerb of the stone base of the rampart. Further E. the corresponding interval was only 15 feet. At its western end, if not also at its eastern one, there were faint indications that the street may have rounded the corner with an easy curve. Was it continued along the line of the defences on the other three sides of the fort? To this question no positive answer can be given. If it was, then we can see that, after crossing in front of the N. gateway, it must have swung slightly southwards, so as to leave the Baths and Latrines in what Hyginus calls the *intervallum*.

(*h*) *Fireplaces.*—Remains of rude hearths or fireplaces were found in various directions throughout the fort. Many of these must mark the site of the camp-fires that warmed the soldiers' quarters. Probably there was one sunk in the floor of each of the compartments into which the wooden barracks would be divided. But they could not all have been of this nature. Among the most notable exceptions were three that lay in a row, close to the rampart on the W. side of the fort, about midway between the gate and the S.W. corner. Built of stone, they were circular in shape, 7 or 8 feet in diameter, and about 3 feet high. They had evidently been much used, although nothing survived to suggest their real purpose. Whatever that purpose may have been—

Fig. 21. Post-holes in front of Barrack Block No. V , with remains of Street, looking E.

and it might be anything from the kindling of signal-fires to the consumption of rubbish—it is odd that they should have been placed just where a westerly wind—the prevailing wind in the district—would drive the smoke straight on to the Praetorium and the blocks of barracks in the *retentura*.

The most remarkable of the fireplaces was, however, a circular recess, cut into the W. side of the outer ditch, 21 feet N. of the W. gateway, and walled with solid masonry. A good idea of its appearance is conveyed by fig. 22. The floor was of boulder clay, and on the same level as the bottom of the ditch. The dimensions were as follows :—

| | |
|---|---|
| Diameter above scarcement | 7 feet. |
| Diameter below scarcement | 5 feet. |
| Width of scarcement | 1 foot. |
| Height to scarcement | 3 feet 3 inches. |
| Height (surviving) above scarcement— | |
| (*a*) on S. side | 1 foot 10 inches. |
| (*b*) on N. side | 10 inches. |
| Width of furnace opening | 1 foot 8 inches. |

Beneath the line of the scarcement the recess contained a large quantity of red ashes, above which were loose stones and soil. Ashes of a similar character were lying in abundance in the ditch outside; they had evidently been drawn from the fireplace, when it was in use. It should be added that the mass of loose stones was so considerable as to show that the building had originally been much higher.

One's first impulse is to regard the circular recess as an oven. Four ovens were found in the body of the rampart at Birrens,[1] and a like number at Inchtuthil.[2] Or the red ashes might suggest that it had been a kiln for drying bricks or tiles.[3] There are serious difficulties in the way of both of these views. It would be strange indeed if the garrison had been dependent for the baking of their daily bread on an

[1] *Proceedings*, 1896, vol. xxx. p. 101.

[2] *Proceedings*, 1902, vol. xxxvi. pp. 209 ff.

[3] For kilns near the S. gate at Amboglanna, Aesica, and Housesteads, see *Arch. Ael.*, xxv. pp. 282 ff.

oven to which no access could be had except by going outside the defences. On the other hand, had it been a kiln, one would have expected to find fragments of bricks or tiles or pottery among the debris. Such fragments were conspicuously absent, and the redness of the ashes may well have been due to the dye-stuffs from the wood that served as

Fig. 22. Circular Recess for Fire in side of Outer Ditch on W.

fuel. Again, the ruins, considerable as they were, furnished no evidence that flagging had been laid across the scarcement, no sign of the usual provision having been made for draught and for the smoke from the fire. These last objections are not perhaps insuperable. Flagging and the stones of a dome might quite well have been carried away by those who plundered the site for building material. Or the kiln might have been

used for drying corn, in which case the fire would be a smouldering one, so that the top would be left open, and planking might suffice as a bridge.

Against all these suppositions there is one most powerful argument—the intense degree of heat to which the whole recess had been subjected. The actual furnace was large out of all proportion to what would be required for a kiln or oven of similar dimensions, and the stones that formed the wall were burned red, deep below the surface. In these circumstances, a suggestion that originated with Mr M'Intosh deserves to be carefully weighed. His view is that the recess was employed for cremation—that it was, in fact, the *ustrinum* of the fort. He supposes that the fireplace below the scarcement would be piled up with dry fuel, and that the body would then be lowered on a strong hurdle of green wood, the ends of which would rest upon the ledge provided by the scarcement. It will be noted that the diameter (7 feet) suits this hypothesis exactly. The fire would be kindled and fed from beneath, and the hurdle would support the body until it was wholly consumed. It is a matter for regret that it was not found possible to test this theory by having specimens of the ash microscopically examined. An opportunity for that may occur elsewhere. In the meantime it is worth pointing out that, if cremation was to be effective, some such system as has been described would be essential. A body would not be consumed by being merely thrown upon a blazing fire. Nor is there much force in the objection that a *ustrinum* in such close proximity to the fort would be offensive. The walls, be it remembered, were high. If the fire were fierce and the consumption rapid—as it would be in such circumstances—no smell would be observable. Except when the fire was freshly lit, there would be little or no smoke. Besides, we have already found great hearths much nearer to the soldiers' quarters.

(*i*) *Refuse-Holes.*—Within the ramparts of the fort the excavators discovered nine rubbish-pits or refuse-holes, all of which were thoroughly examined. The position of each will be found marked upon the Plan

(Plate II.). It will be observed that one of them lay within the area of the early fort, and a second on the line of the early ditch, while the rest were entirely clear of the Agricolan enclosure. As we shall see presently, their arrangement distinctly suggests that the whole group belongs to the Antonine period. The main facts regarding them are embodied in the following descriptions:—

*Hole No. 1* lay in the N.W. corner of the *praetentura*. It must have been close to the western end of Barrack Block No. I. Circular in shape, it had a diameter of 18 feet at the mouth, as against 5 feet at the bottom. The depth was 15 feet. Stakes of oak and of mountain ash had been driven in all round it, evidently to support the sides. The contents consisted of 2 feet of soil and stones next the surface, 2 feet of ashes, 8 feet of decayed vegetable matter, and 3 feet of soft clay and large boulder-like stones. Mixed with the vegetable matter were bones of animals, boots, pieces of red-deer horn, broken pottery, bits of wrought wood, a 'first brass' coin of Trajan, and sundry fragments of metal. Eleven of the bones proved to be human—all either of hands or of feet.

*Hole No. 2* lay in the eastern half of the *praetentura*, about 10 feet to the rear of the line of the S. wall of Barrack Block No. II. Like Hole No. 1, it was circular, the diameter being 15 feet at the mouth and $5\frac{1}{2}$ feet at the bottom, while the lip was protected by a stone kerb, 6 inches deep, running all the way round the edge. When it was cleared, 5 feet of stones and soil, 12 feet of decayed vegetable matter, and 5 feet of soft clay gave a total depth of 22 feet. The vegetable matter contained many bones, boots, and pieces of leather, besides pottery and other relics. The circumstance that for the last 5 feet of their course the sides were perpendicular suggests that the hole was originally meant for a well. If so, the large quantity of soft clay in the bottom possibly explains why the project was abandoned; it may indicate that the upper portion of the sides had slipped.

*Hole No. 3* lay due W. of the southern portion of the Praetorium. It formed a rectangle 6 feet long by 5 feet wide, with a depth of 6 feet. A quantity of ashes was found near the surface. Beneath these came stones and soil. The relics were very few in number. A noteworthy feature was a stratum of coal, 6 inches thick, which covered the bottom. The pieces of coal were very small, the greatest dimension of the largest being only about an inch.[1]

*Hole No. 4*, which was likewise rectangular, lay in the *retentura*, close to the S.W. angle of the fort. It was 4 feet long, $3\frac{1}{2}$ feet wide, and 4 feet deep. It contained about 2 feet of decayed vegetable matter, but yielded no objects of any importance.

*Hole No. 5* was also unfruitful. It was similar in shape to No. 4, which it closely adjoined. It was $5\frac{1}{2}$ feet long, 4 feet wide, and 5 feet deep. The layer of vegetable matter was $2\frac{1}{2}$ feet thick.

*Hole No. 6* was one of the most remarkable of the series. It was near the S. gate, on the western side of the street that ran thence towards the Praetorium. Its surface measurements were 14 feet by 6 feet, and it was 8 feet deep. In the 2 feet of soil that had first to be removed were several large sandstone flags. The 5 or 6 feet of decayed vegetable matter that followed contained the usual debris of pottery, leather, wood, bones, and the like, as well as a number of mussel shells. Then came a complete chariot wheel. Three long oaken stakes had been driven into the boulder clay of the bottom, one of them passing between two of the spokes of the wheel. It looked as if these stakes or posts had been intended to support the flag-stones on the top.

*Hole No. 7* was 5 feet long, 4 feet wide, and about 5 feet deep. It lay directly opposite No. 6, on the other side of the street already

[1] It may be mentioned that there is a coal outcrop in the immediate neighbourhood, about 150 yards to the E. of the Castle Hill. It is hardly more than 4 inches thick at the surface.

mentioned. The decayed vegetable matter with which it was filled contained nothing that calls for special mention. Near the surface was one of the capitals from the colonnade round the open court of the Praetorium.[1] It had been broken, probably by the plough

*Hole No. 8* was of exactly the same size as the preceding. It lay about 12 feet S. of the eastern end of the line of post-holes that marked the course of the S. wall of Barrack Block No. IV. Beneath 2 feet of soil and stones was a stratum of vegetable matter 3 feet thick, containing boots, bones, and so on, as well as a few oyster and mussel shells much decayed.

*Hole No. 9*, which, like all the others in the *retentura*, was rectangular, lay just within the eastern rampart near the S.E. angle of the fort. It was 14 feet long, 7 feet wide, and 7 feet deep. At its northern end there were some indications of a built cover, the chief relic being a large flagstone, 4 feet long and 1 foot 8 inches wide. In the centre of this was a rectangular opening, $4\frac{1}{2}$ inches by 4 inches. The hole itself contained 2 feet of soil and ashes, and 5 feet of decayed vegetable matter. Among the 'finds' were boots, bones, portions of red-deer horns, oyster shells, the greater portion of the shell of an egg—about the size of a hen's egg,—several birch brooms or 'besoms,' much worn, and a large sheet of leather rolled up, with a rope inside of it.

The general character of the pits just described hardly admits of question. They were neither more nor less than the ordinary 'middens' of the Antonine fort. The nature of their contents (with the single exception of the chariot wheel) accords completely with this supposition. And the same may be said of their distribution. The two large pits were intended to serve the blocks of barracks in the *praetentura*. One lay to the E., the other to the W. of the *Via Praetoria*. The six smaller ones in the *retentura* were divided in similar

[1] See *supra*, p. 441.

fashion between the two sides of the fort, and here again a connection with the barrack buildings seems certain. Attention may be directed to the manner in which the latter group is arranged, with some approach to symmetry, in relation to the neighbouring streets. In view of all this, the position of No. 3 may perhaps be regarded as confirming an opinion already expressed, to the effect that a dwelling-house—the residence of the commandant—had once stood to the W. of the Praetorium.[1] The sharp contrast that Nos. 1 and 2 present to the remainder is somewhat striking. They are very much larger, and they are circular in shape, not rectangular. It was suggested above that No. 2 was originally intended for a well.[2] Possibly No. 1 may also have been dug in quest of water; but the whole of the rest appear to have been specially prepared as receptacles for rubbish. Two points that call for remark in passing are, first, the probability that at least Nos. 6 and 9 had been provided with a covering of stone, and second, the occurrence of quantities of ashes near the surface of Nos. 1, 3, and 9. The latter feature may indicate that, after the holes had been filled, the refuse was thrown on the top and burned.

## V. The Relics.

The mass of relics recovered in the course of the excavations was of unusual extent and interest. Many of them came, as has been already stated, from the Well. The majority of the rest were extracted either from the refuse-holes or from the ditches. It is worth observing that, in the case of the ditches, by far the most prolific spots were the outermost corners.[3] The reason is not difficult to divine: it was only natural that it should be the parts furthest from the gates that were selected for the deposit of rubbish. The one exception proves the rule. The N.E. corner yielded absolutely nothing. And there was an obvious motive

[1] See *supra*, p. 452.

[2] See *supra*, p. 463.

[3] Mr Haverfield tells us he has noticed the same thing at other forts, *e.g.* at Chesters.

for keeping this clean. The Military Way skirts it closely, and the sight of broken crockery and cast-off shoes would have been offensive to the passers-by. The whole of the 'finds' are now preserved at Gartshore House, where they constitute a small museum, well worthy of study by those interested in Romano-British antiquities. The following brief description aims merely at providing a general account of each important class, together with a particular notice of a few of the more prominent objects.

### *A. Pottery.*

(*a*) *Coarse Ware.*—The greater number of the very abundant pot-sherds are fragments of the coarse unglazed ware so common on Roman sites in Britain and elsewhere. This ware was evidently employed mainly for the larger vessels of ordinary household 'plenishing.' It varied a good deal in colour, from yellowish white to reddish or to ashen grey. Of the vessels in question the larger proportion were used for storage purposes. Among the Romans the chief storage vessels were the *dolium* and the *amphora*. Strictly speaking, these were measures of capacity, the former being a multiple of the latter. As a matter of fact, the terms appear to have been applied somewhat loosely to distinguish two different classes of vessel, irrespective of size. The dolium was globular in shape. Its leading characteristics were a wide mouth, with everted lip, and the absence of any considerable neck. The bottom was generally flattened somewhat, to give stability, and was frequently supplied with a substantial 'foot.' Dolia were sometimes of great size; the 'tub' of Diogenes, for instance, was a dolium (*πίθος*). The typical amphora, on the other hand, was ovoid rather than globular, and had a well-defined neck, flanked by two looped handles. Towards the bottom it narrowed so rapidly as to be incapable of standing upright without support. It was probably meant either to rest in a framework of some sort or to be buried a certain distance in the earth.

Broad as this distinction may seem to be, it is of comparatively little

value as a working basis of classification when one is confronted with actual remains. There was so much variation of shape and form that it must always be doubtful where the dividing line is to be drawn. In dealing with the Bar Hill relics there is the added difficulty that the potsherds are for the most part too fragmentary to admit of reliable inferences being drawn as to the outlines and dimensions of the original vessels. All that can be said with certainty is that many sizes and several distinct types of storage jars are represented, some of them having two looped handles, some one, and some none at all.

Fig. 23 reproduces an almost perfectly preserved example of a class to which not a few of the fragments should undoubtedly be attached. This is the specimen recovered from the Well at a depth of 38 feet. It may fairly be described as an amphora. The 'find-spot' suggests that it may perhaps have been used to draw water in an emergency.[1] It is of a yellowish colour, stands 2 feet $6\frac{1}{2}$ inches high, and has, at its widest part, an inside diameter of $18\frac{1}{2}$ inches. The circumference round the outside of the lip is 20 inches, round the neck 13 inches, and round the widest part of the body $62\frac{1}{2}$ inches. The walls vary much in thickness, the maximum being about an inch. They are of comparatively rude workmanship, showing no traces of the wheel, and would appear to have been moulded on the inside by the hand, and on the outside by the aid of a piece of wood. The neck and handles are much more carefully made, and have been attached subsequently while the clay was still soft.

Fig. 24, No. 1, shows the upper part of a jar of quite a different type. It is of yellowish clay, more finely wrought than is usual in the case of vessels of this size, and has evidently been made with the wheel. The outside diameter of the mouth is $5\frac{1}{4}$ inches, and the circumference of the neck is 13 inches. Close beside it (No. 2) is a curious fragment, also wheel-wrought, but presenting some rather unusual features. As placed in the illustration, it looks like a portion of a cylindrically-shaped jar.

[1] Jacobi has already inferred that amphorae were occasionally employed for such a purpose (*Das Römerkastell Saalburg*, p. 421).

Probably that is what it really is. But, when laid upon its side, it has more resemblance to a piece of broken water-pipe. The material is of a greyish-yellow colour. The exterior surface is singularly smooth, but

Fig. 23. Amphora from Well. ($\frac{1}{7\frac{1}{2}}$.)

the interior is corrugated throughout its whole length with a series of circular ridges, the effect of which must have been to increase the power of resistance to pressure. The ridges are lower and less decided at the upper end, but become gradually more prominent as they descend. The

Fig. 24. Fragments of Pottery, Wooden Bobbin, etc.

walls thicken in similar fashion—a fact which is in itself conclusive against the view that it formed part of a water-pipe. The extreme height of the surviving portion is 11½ inches, and its greatest girth is 17 inches.

For the rest, storage vessels are represented mainly by a heap of disconnected fragments. Necks, mouths, and handles are very common. A few examples are given in fig. 26, Nos. 3–5. The frequent survival of these parts is due to their more careful and substantial make. Occasionally a handle or a mouth bears a potter's stamp or a mark, recording either the capacity of the vessel or the name of the manufacturer, or sometimes, possibly, the nature of the contents. Unfortunately, the heavy clay soil of the Bar Hill has had a prejudicial effect on the legibility of these inscriptions. One amphora shows distinctly X and X on opposite sides of its everted lip, as well as what seems to be N on one of its handles. The remaining amphora marks are all more or less doubtful. Here is a list, hardly any letter in which is to be regarded as quite certain :—

I..SP...Q, on handle.

GN·APCC, „ „

MMCCV, „ „

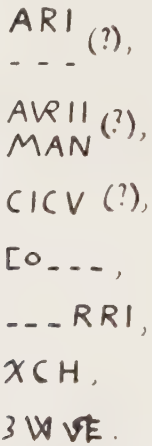
VIRA. „ lip.

Slightly doubtful is also ΛII, scratched on a handle.

Apart from storage vessels, the coarser ware was mainly used for what are generally termed *mortaria* or *pelves*. The pelvis was a deep basin, not unlike a modern milk-pan. A special feature was the very large everted lip, pierced at one point by a grooved spout. The larger part of the inside surface was roughened by an admixture of small pebbles or pounded quartzite. The clay itself was harder and finer than that employed for many of the storage vessels. The colour varied. The Bar Hill fragments, which are fairly numerous, are either ashen-grey or decidedly

red. A potter's mark was frequently placed on the lip. The following occurred at Bar Hill. It will be seen that several of them are uncertain.[1]

A conventional palm-branch.



In describing the corresponding fragments from Birrens, Dr Anderson has drawn attention to the fact that some of them presented a blackened exterior, and has suggested that these dishes must sometimes have been used for heating food.[2] Although nothing of the sort was observable at Bar Hill, ample evidence from other sites confirms his inference.[3] The roughened interior, however, supplies an unmistakable clue to the most ordinary purpose of the pelvis—the preparation of corn, fruit, or vegetables for the actual process of cooking. The broad rim was intended to provide a firm hold, while the spout was for draining off the water employed in cleansing or in softening during trituration.[4]

[1] Mr Haverfield reminds us that many of the stamps on amphorae and pelves were probably 'bogus,' having no definite significance, but being merely intended to lend an air of general respectability to commonplace ware.

[2] *Proceedings*, 1896 (vol. xxx.), p. 183.

[3] H. B. Walters, *Ancient Pottery*, ii. p. 551.

[4] The probable method of use has been well explained by Jacobi (*Das Römerkastell Saalburg*, pp. 424 f.).

(*b*) *Finer Reddish Ware.*—Fragments of a somewhat finer reddish ware—varying in quality, but generally resembling that of which flower-pots are made nowadays—were also present in considerable quantities. The upper parts of two jars or vases afforded an interesting glimpse of the method of manufacture. After the body of the vessel was finished, but while the clay was still soft, the workman attached the mouth by thrusting the neck into an aperture left to receive it. He then inserted his finger, bent the lower part of the neck inwards till it united with the body, and finally rounded off the junction as best he might: the finger-marks can still be clearly seen. Last of all, the handle was added. On the average, the vessels of the 'flower-pot' ware are considerably smaller than those made of the coarser material already spoken of. A few specimens are covered with white or black colouring matter. In one instance a layer of black clay has been superimposed on a layer of red. No potters' stamps were observed on vessels of this class. But there are two *graffiti*—ƧEN on what may once have been the bottom of a jar, and X on a handle, the latter being probably an indication of capacity. A somewhat curious style of decoration is exemplified by a portion of a bowl. The outer margin of the everted lip is 'frilled' instead of straight, and about $1\frac{1}{2}$ inches from the top there projects a circular band, the lower edge of which is also 'frilled.' Similar vessels have been found in London (now in the Guildhall Museum) and York, as well as at Caerwent and Gellygaer.[1]

(*c*) *Thin Black Ware.*—The familiar black ware is well represented. The colour, as displayed at the fractures, is by no means uniform, but varies from blue to grey. Sometimes it is actually red, a result of the hard burning process to which vessels of this class were subjected. Three main groups can be distinguished. The first, which is also the smallest, consists of storage vessels. The example here illustrated

[1] *The Roman Fort of Gellygaer*, p. 79. Mr R. A. Smith informs us that a piece of grey ware from Silchester, now in the Reading Museum, is similarly decorated.

(fig. 25) stands $15\frac{1}{4}$ inches high. At its widest part the diameter is $12\frac{1}{4}$ inches. At the mouth the corresponding measurement, over the lips, is $6\frac{3}{8}$ inches. The girth round the neck is 14 inches. The body is very simply ornamented by a few lustrous bands passing, at irregular intervals, round its upper part and round the neck. This vase was

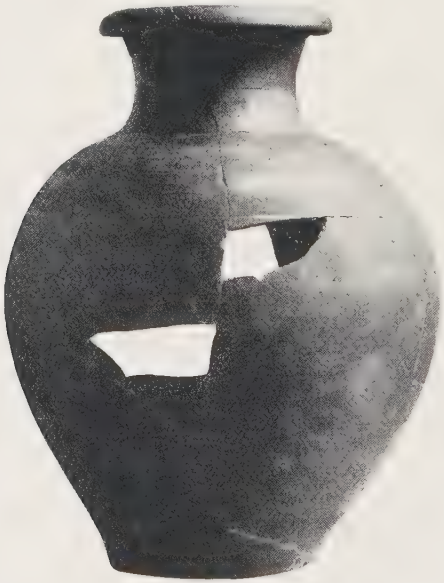


Fig. 25. Jar of Black Ware. ($\frac{1}{5}$.)

recovered in fragments from Refuse-Hole No. 2. The same spot yielded considerable portions of a second vase, evidently of very similar shape and dimensions. These were the most important remains definitely assignable to this group. But mention may also be made of some fragments of a smaller vase, where the decoration consisted of rows of small circular spots, apparently laid on with a self-coloured slip.

The second group is composed of wide, flat-bottomed, platter-like dishes. These were of varying dimensions. A fine example, found quite uninjured in Refuse-Hole No. 2, is reproduced in fig. 26, No. 1. It has an outside diameter of $7\frac{3}{4}$ inches across the mouth, and of $6\frac{3}{4}$ inches across the bottom, inclusive of chamfer. Its depth is $1\frac{1}{2}$ inches.

Fig. 26. Plate of Black Ware, Copper Pot, and Fragments of Coarse Ware.

The majority, however, have been smaller and deeper, closely resembling flower-pot saucers in their shape. See, for instance, fig. 24, No. 3. Occasionally the surface has been left perfectly plain, but often the exterior is ornamented with an arrangement of scored or burnished lines. Sometimes a single series of such lines runs transversely from top to bottom. More frequently two series cross each other diagonally, producing the impression of a network. Here and there we get a

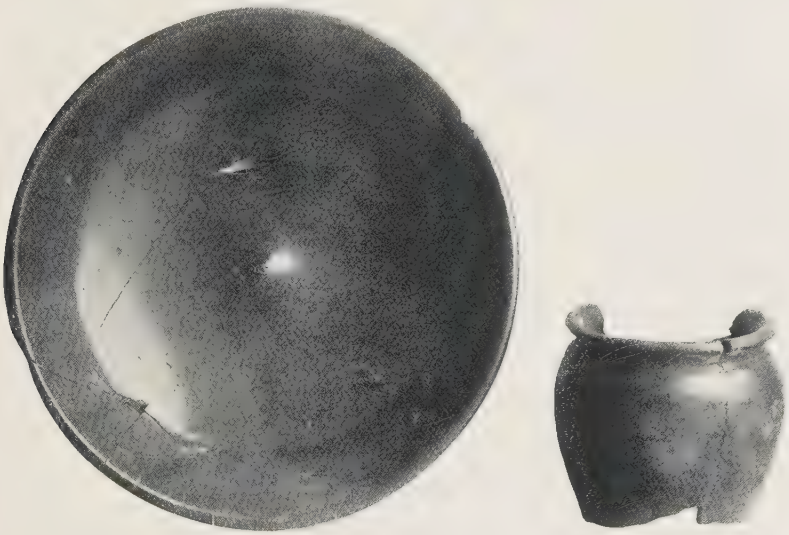
departure from the normal pattern. In one case a set of deep scratches gives an effect of unusual crudity.

The third group is in some ways the most interesting. The vessels belonging to it may conveniently be termed *ollae*, for the thick coating of hard soot with which the fragments are covered makes it clear that they were cooking-pots. The method of decoration corresponds generally to that employed on the platter-like dishes. The *ollae* differ slightly in shape; but, taken as a whole, they may be described as having a narrow bottom, bulging sides, practically no neck, and a very wide mouth with a lip that turns rapidly downwards. The narrow bottom suggests that, when in use, *ollae* may have frequently been set into an iron framework that stood upon the cooking-hearth.[1] But one of the Bar Hill fragments proves clearly that sometimes at least they were suspended. This is a portion of a mouth, having attached to it a solid 'ear,' three-quarters of an inch long, pierced by a small hole. The greatest breadth of the ear is a quarter of an inch, and the diameter of the hole is one-sixteenth, just sufficient to admit a suspending wire. It may be added that suspension would be possible even without ears. The lip—as shown, for example, in fig. 27, No. 2—is usually sufficiently everted to allow an encircling wire to rest safely and comfortably in the groove beneath it. To this would be added a second wire arched over the top of the *olla*, much as in the case of the bronze pot illustrated in fig. 26, No. 2. The second wire would serve also on occasion as a handle. Handles of any other sort, it should be explained, occur but rarely on vessels of this type. That they had a value where they did exist is shown by the fact that an ear-shaped open handle (fig. 24, No. 4) has been carefully mended in the same material. Another piece of an *olla* has three small holes, evidently for lead clamps.

(*d*) '*Samian*' *Ware.*—Fragments of red 'Samian' ware are numerous. As a rule, they are in poor condition, the heavy, wet clay having made sad havoc of the lustrous surface. The drinking-cup of

[1] See Jacobi, *Das Römerkastell Saalburg*, p. 242, for illustration.

fig. 24 (No. 5) gives a good idea of the extent to which much of this ware has suffered. The fine plate represented in fig. 27 (No. 1) has, however, lost little of its original brilliance. It was found broken, but practically complete, in the S.W. corner of the outer ditch. The diameter is 11 inches, and the inside depth 2 inches. In the centre is



1 2

Fig. 27. Plate of Samian Ware, and Pot of Black Ware. ($\frac{1}{3}$.)

the stamp **BELINICIM.** The remaining fragments present no features of special interest. They are portions of cups, plates, and bowls of the normal shapes and sizes. The bowls display the usual style of ornament—the 'egg and tongue' border, hunting scenes, foliation, and the like. Some progress has recently been made in the direction of a chronological classification of Samian ware.[1] A careful scrutiny of the

[1] Koenen, *Gefässkunde* (1895); Dragendorff, *Bonner Jahrbücher* (1895, etc.); Déchelette, *Les Vases céramiques*, etc. (1904).

pieces from Bar Hill has failed to disclose any that bear characteristic signs of being 'early.' In addition to the stamp already mentioned, the following makers' names occur :—

AVITVSF,
CALV---(?),
DIVICATVS,
GEN[*IALIS·F*?],
MALLVROF,
*PE*]CVLIARISF,
T---,
VA---,
---ARO(?),
---VSF.

These are on the inside in every case. The following, all representing the same name (*Cinnami m*[*inu*]), are on the outside :—

MIMAИИIↃ,
---И⅄---,
---1И---,
CIИ---.

The whole of these marks, so far as they are certain, are of more or less common occurrence elsewhere. Three pieces of Samian have letters scratched upon their outside surface. One of these reads GLH. Each of the others has VI.

(*e*) *Miscellaneous Fragments, etc.*—There remain a certain number of potsherds which cannot conveniently be classed under any of the four heads already dealt with. There are, for example, about half a dozen fragments of vessels of 'Castor' ware. They are of the usual dull slate colour, with a coppery tint. The majority are ornamented with conventional foliation, but one piece shows the legs and part of the body of an animal. In all cases the decoration has been laid on in 'barbotine'

with self-coloured slip. Fig. 24, No. 7, shows an interesting little drinking-cup of fine clay, now reddish in colour, but possibly once black. From the N. ditch, where it passes in front of the Baths, there were collected (as has been mentioned above)[1] numerous portions of small vases or bottles, of different qualities of clay, often reddish in colour, and occasionally bright red. The shapes vary somewhat. One of the most complete seems to have been originally about 4 inches high, with a maximum outside diameter of $2\frac{1}{2}$ inches, narrowing rapidly to a small solid 'foot.' In another instance the surface has been granulated by an admixture of gritty particles which appear to have been dusted on while the slip was still moist. This device would enable the vessel to be held securely even by oily fingers. A third piece, with a diameter of $1\frac{3}{4}$ inches, looks like a lid or cover. The most remarkable, however, is the lower end of a small vase which has been covered with bright enamel on the inside and on the upper part of the outside. The bottom and the lower part of the outside are coloured a deep, rich bronze. The general character of these vessels has already been interpreted as suggesting that they were originally used to hold unguents or similar toilet requisites.[2] Green glazed ware was represented by several fragments, three of them of reddish clay. Mention should also be made of the bottom of a jar, about 2 inches in diameter, pierced with four holes, for use as a sieve or strainer. It recalls a somewhat similar but decidedly larger article from Castlecary.[3]

A few miscellaneous objects of clay have still to be enumerated. A lamp of the ordinary form was found in trenching the ground between the N. ditch and the Antonine Vallum. Its greatest length is $2\frac{1}{4}$ inches, inclusive of the mouth but exclusive of the handle, which is missing. It bears no ornament or stamp of any kind. A solid lump is curious as showing the distinct impression of two human fingers. In shape it has some resemblance to the rude outline of a lamp. A small crucible was recovered from the N.W. corner of the outer ditch. It is

[1] See *supra*, p. 448. [2] See *supra*, p. 448.
[3] *Proceedings*, 1903 (vol. xxxvii.), p. 335, fig. 34.

$1\frac{1}{2}$ inches in diameter, exclusive of spout, and has an inside depth of $1\frac{1}{2}$ inches also. Six little balls or marbles of clay from Refuse-Hole No. 6 are much too light to be sling bullets. They average about $\frac{1}{2}$ inch in diameter, and have been rolled with the hand and burned red. They are probably children's playthings. Lastly, there are a number of 'counters' or discs, fashioned out of broken pottery, such as are often turned up on the sites of Roman forts. It is generally agreed that they were used in some game. A few have holes in the centre, like spindle-whorls.

*B. Tiles and Remains of Floors.*

Broken tiles were fairly numerous. The flange on the edge of some indicated that they had been used for roofing purposes. Red roofs, therefore, fall to be added to the details that go to make up our mental picture of the original aspect of the Antonine fort. They would be doubly conspicuous as exceptions, for the wooden buildings, which occupied so large a portion of the area, were in all probability covered with thatch. Other tiles had obviously been intended for flooring or for use on walls and in flues. No stamps were observed on any of them; but scored lines—possibly 'keys' for plaster—were not uncommon, there being generally two sets crossing each other either diagonally or at right angles. One tile was marked with a circle.

A small, flat, perfectly diamond-shaped piece of black composition, $\frac{1}{4}$ of an inch in thickness, would appear to have belonged to a mosaic. It was found in the Well. From the N.W. corner of the outer ditch came a little bit of flooring brick overlaid with cement on both sides, and having four holes for inlaying. Its original dimensions were $\frac{3}{4}$ of an inch thick by $1\frac{3}{4}$ inches broad by at least $2\frac{3}{4}$ inches long. More interesting still is a fragment of flooring—measuring $1\frac{3}{4}$ inches by $1\frac{1}{4}$ inches across the top, and square cut on two sides—from the short ditch on the E. side of the fort. It is in three well-defined layers. The bottom consists of very fine concrete about $1\frac{3}{8}$ inches thick. Above that is $\frac{3}{8}$ of an inch of glass, and above the glass is $\frac{1}{8}$ of an inch of

cement. The three are fused into a solid mass, and the whole gives evidence of excellent workmanship. This would form a most enduring material and an absolutely dry pavement. These remains suggest that some of the apartments within the fort had been elaborately floored. But their very rarity proves that such an arrangement was far from being usual. Clay or tiles must have been much more common.

### *C. Glass and Glass Paste.*

The relics include about fifty fragments of bottle glass. So far as can be judged, the bottles have all been of the ordinary square form. The majority have had smooth sides, but at least one has been fluted. Reeded handles have been the rule. The sizes were no doubt various. An uninjured bottom is $2\frac{3}{4}$ inches square. A mouth still entire, with neck and reeded handle, has from lip to lip an outside diameter of $2\frac{1}{2}$ inches, and an inside diameter of $1\frac{1}{8}$; the width of the handle is $2\frac{1}{4}$ inches, and its height $1\frac{1}{4}$. The colour is generally a bluish green, but three pieces of perfectly clear bottle or jar glass were recovered from the refuse-holes. Taken as a whole, the bottles have been strong and substantial. Probably they were imported along with their contents. At the same time, the manufacture of glass was certainly carried on inside the fort. Many small lumps of glass slag were picked up within the area of the workshops. It may well be that the glass for the windows was home-made. Of window-glass there are about thirty fragments, the largest of which measures 5 inches by $3\frac{1}{2}$. One side is invariably obscure, showing that the sheets were run on a slab. The average thickness is about $\frac{1}{8}$ of an inch, and the usual tint is a well-marked bluish green. There is, however, one little piece of a whitish colour, about $\frac{3}{16}$ of an inch thick.

Personal ornaments of any kind are very few in number. But a smooth and peculiarly elongated bluish bead of vitreous paste has evidently been strung on a necklace. It is quite unlike the usual ribbed and melon-shaped bead of glass paste or earthenware which one

is accustomed to associate with the Romano-British period. The latter type is represented by five specimens, all of the same greenish colour. The largest is $\frac{3}{8}$ of an inch high, and has a transverse diameter of $\frac{1}{2}$ an inch. An oval piece of porcellanic paste, pink in colour, has evidently dropped from a setting. Its greatest length is $\frac{1}{2}$ an inch, and its greatest breadth $\frac{5}{16}$. Its upper surface is slightly rounded. Beneath, it is quite flat but has a bevelled edge.

### *D. Stone.*

(*a*) *Inscribed Stones.*—The excavations added two to the list of Roman inscriptions found in Britain. Both of these were discovered in the Well. The altar reproduced in fig. 28 is of the ordinary form, and has the usual basin-shaped depression on the top. It was uninjured but for a fracture at the lower right-hand corner. The total height is just over 3 feet, 9 inches being given to the moulded base, 18 to the 'die,' and 10 to the cornice or 'capital.' Measured across the front, the lowest plinth of the base and the topmost tier of the cornice have each a width of 17 inches. In the case of the die, the corresponding dimension is 15 inches at the bottom and $14\frac{3}{4}$ inches at the top, while at the latter point the depth from front to back is 14 inches. The inscription, which is clearly cut in letters about 2 inches long, reads as follows :—

COH·I·
BAETASIOR
·C·R·

The interpretation is of the simplest. "*Coh*(*ors*) *prima Baetasior* (*um*), *c*(*ivium*) *R*(*omanorum*)" can only mean "The First Cohort of the Baetasii, Roman citizens, [erected this altar]." But to whom did they erect it? The absence of the name of a divinity is at first sight puzzling. It ceases to be so, if we remember that the 'find-spot' was within the precincts of the Praetorium. Doubtless the altar had stood in the *Sacellum*. Such a setting would of itself suffice to show its significance.

Its very presence in the shrine would imply a direct connection with the god who was held in highest honour there. If the object of dedication had been expressed in words, it might have been (as it frequently

Fig. 28. Altar from the Well. ($\frac{1}{8}$.)

is) "*I*(*ovi*) *O*(*ptimo*) *M*(*aximo*)." Or the reference might have been to the imperial cult in its military aspect; "*Discip*(*linae*) *Aug*(*usti*)" is the legend on the altar from the well of the Praetorium court at Birrens,[1]

[1] *Proceedings*, vol. xxx. (1896), p. 131.

while an altar found in the cellar beneath the *Sacellum* at Bremenium reads : "*G*(*enio*) *d*(*omini*) *n*(*ostri*) *et signorum*."[1]

The second of the two new inscriptions was incomplete. It had been cut upon a slab which must originally have been about 3 feet long by

Fig. 29. Fragments of Inscribed Tablet. (¼.)

2 feet high. Although more than half of it has perished irretrievably, the three fragments that survive (fig. 29) enable the whole to be restored with practical certainty (fig. 30). The only line that presented any difficulty was the last, and even here the missing letters were

[1] *C.I.L.*, vii. 1030. *Cf.* Bruce, *Roman Wall* (1867), p. 318.

speedily supplied.[1] Had the stone been found entire, it would have read somewhat as follows :— [2]

·IMP·CAESARI·
T·AEL·HAD·ANTONINO
·AVG·PIO·P·P·COH·
I·BAETASIOR·C·R·OB
VIRTVTEM·ET·FIDEM

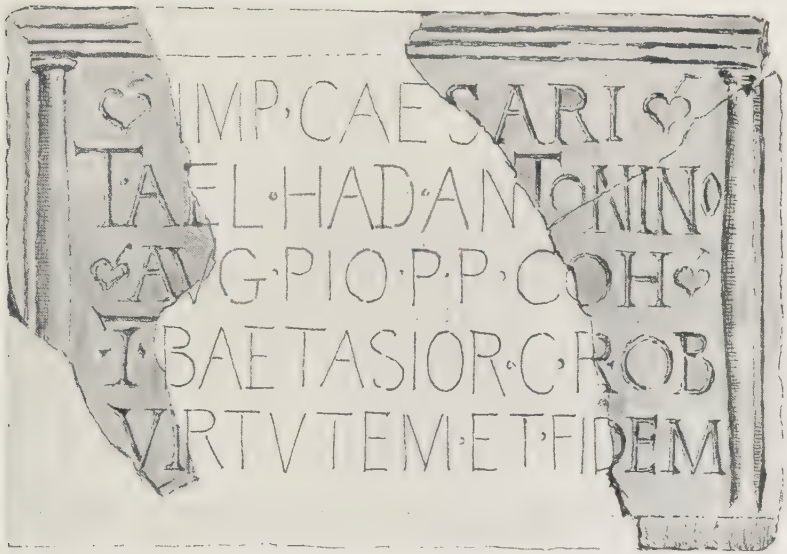



Fig. 30. Inscribed Tablet restored. (⅛.)

"The First Cohort of the Baetasii, made Roman citizens for their valour and loyalty, [erected this] in honour of the Emperor Caesar Titus Aelius Hadrianus Antoninus Augustus Pius, Father of his Country."

[1] By Mr Haverfield in *Athenaeum*, No. 3980 (Feb. 6, 1904), pp. 184 f.

[2] Possibly there was another line consisting of one word in small letters. '*Appellata*,' which must either have been expressed or understood, is probable. Mr Haverfield informs us that such an addition would be quite in second century epigraphic style.

The analogy with Birrens holds good once more. If less elaborate in form, the inscription is of exactly the same class as that upon the large tablet from the Dumfriesshire 'station' with the name of the Second Cohort of the Tungri.[1] And the 'find-spot' is also the same. Closely akin is the stone set up by the Sixth Cohort of the Nervii at Rough Castle.[2] In all three cases the remains were discovered in the front court of the Praetorium. We may safely conclude that a similar slab occupied a prominent position in the corresponding quarter of all the second century Roman forts in North Britain. It recorded the name of the corps that had formed the original garrison.

Under the Empire it was a recognised principle of army administration that the frontier posts should be defended, not by the legionaries, but by the less costly levies known as auxiliary cohorts. The particular cohort mentioned in the new inscriptions had originally been recruited among the Baetasii. This people probably had their permanent home somewhere about the mouths of the Rhine, near the borderland where Celt and Teuton met. To which of the two stocks they belonged it is impossible to say. The sum of our information regarding them amounts to little more than that they were neighbours of the Tungri and the Nervii, and that they were among the tribes who took part in the great revolt of Civilis.[3] We have clearer ideas as to the history of the unit they contributed to the Roman army of occupation in Britain. Military diplomas of the years 103 and 124 A.D. prove that the First Cohort of the Baetasii was in the island at least as early as the beginning of the second century.[4] They must have lain for some time at Uxellodunum (Ellenborough, near Maryport), close to the western end of Hadrian's wall, for their presence there is attested by no fewer than five inscriptions.[5]

[1] *Proceedings*, vol. xxx. (1896), pp. 128 ff.

[2] *Ibid.*, vol. xxxix. (1905), pp. 470, 472.

[3] Pliny, *Nat. Hist.*, iv. 106 ; and Tacitus, *Hist.*, iv. 56 and 66.

[4] *C.I.L.*, vii. 1193 and 1195.

[5] *C.I.L.*, vii. 386, 390, 391, 394, and 395. They do not, however, appear to have formed the regular garrison of Uxellodunum. The *Cohors Prima Hispanorum, Equitata*, was there under Hadrian, and was still there in the time of the *Notitia*.

We learn now that, when Lollius Urbicus fortified the isthmus of the Forth and Clyde, they were moved up to Bar Hill. Whether they returned to Uxellodunum, after the Vallum of Pius was abandoned, we have no means of knowing. But fully two hundred years later we get a glimpse of them confronting danger from another quarter. The *Notitia* gives their station as Regulbium (Reculver), on the Saxon Shore.[1]

The Baetasii are not the only auxiliaries whose name is associated with Bar Hill. In 1895 there was found in the Castle Hill Park, as already mentioned, an altar dedicated to Silvanus by Caristanius Justinianus, Praefect of the First Cohort of the Hamii.[2] With this must be connected an inscription seen near Kilsyth in the sixteenth century, but long ago lost. It was a tombstone bearing the name of C. Julius Marcellinus, Praefect of the First Cohort of the Hamii.[3] The Hamii, then, were also at Bar Hill. But the epigraphic evidence throws no light on the question as to whether they relieved the Baetasii there, or whether the cohort, or a detachment of it, was employed to strengthen the original garrison, either during the whole period of occupation or at some crisis when the pressure on the line of the Vallum was exceptionally heavy. The latter supposition perhaps derives some support from the fact that the Hamii, who probably came from Syria,[4] were soldiers of a special class. They were bowmen, as we learn from the descriptive epithet *sagittarii*, applied to them in one of several inscriptions that prove them to have been stationed for a time at Magnae (Carvoran) on Hadrian's Wall.[5]

At this point it will be convenient to notice shortly the only remaining inscriptions that can with reasonable probability be assigned to our fort. They number three in all. An altar dedicated to Mars Camulus, and now in the Hunterian Museum, was catalogued by Hübner under

[1] *Not. Dign. Occ.*, xxviii. 18.

[2] See Haverfield in Glasgow Arch. Society's *Antonine Wall Report*, pp. 153 ff. The stone was presented to the University of Glasgow by Mr Whitelaw, and is now in the Hunterian Museum.

[3] *C.I.L.*, vii. 1110.

[4] *Antonine Wall Report*, p. 155.

[5] *C.I.L.*, vii. 748. *Cf. ibid.*, 1195.

Westerwood. It is much more likely that it belongs to Bar Hill.[1] The two others are lost. They were both on stones that appear to have been erected by legionary detachments in honour of the Emperor Antoninus Pius. One, a part of a pillar, was seen by Gordon "at Barhill fort," and subsequently passed into the collection of Baron Clerk.[2] Its fellow was built into the wall of the garden of a manor-house near Kilsyth.[3] Mention may also be made of two altars from Bar Hill seen by Gordon at 'Achenvole' House, and figured by him in the *Itinerarium* (Pl. 13, 1 ff.). One was of a commonplace character. The other was noteworthy for "several remarkable Figures engraved upon it, having a *Corona Triumphalis*, with an Inscription in the Middle, which is now defaced. Upon one side is engraved, in *Relievo*, a *Quiver* full of *Arrows*; upon the other side an *Arcus* or *Bow*."[4] The bow and quiver remind us of the Hamii.

(*b*) *Sculpture.*—The architectural remains will be discussed below in a special Note by Mr Ross. Apart from these and from the inscribed stones, the main interest attaches to four rude pieces of sculpture, executed in native freestone (fig. 31). Though they are placed together in the illustration, they were found in widely different quarters of the fort—No. 1 in the S.E. corner, close to Refuse-Hole No. 9; No. 2 in the N.E. section, 36 feet W. of the inner kerb of the E. rampart, and 12 feet S. of the inner kerb of the N. rampart; and Nos. 3 and 4 to the N. of the Storehouse, on the lines, respectively, of the inner and outer Agricolan ditches. It is a remarkable fact that each of the four was discovered lying among the ashes of a rudely constructed hearth.

No. 1 is $11\frac{1}{2}$ inches high and has a maximum breadth of $12\frac{1}{2}$ inches. It represents the bust of a man in the act of raising to his lips a drinking vessel held in both hands. The attitude is unmistakably reminiscent of the squatting Silenus as figured in certain ancient works of art.[5] And the identification thus suggested receives strong support

[1] See James Macdonald, LL.D., *Roman Stones in the Hunterian Museum*, p. 69.
[2] *C.I.L.*, vii. 1109. [3] *C.I.L.*, vii. 1110*a*. [4] *It. Sept.*, p. 55.
[5] See, for example, S. Reinach, *Répertoire de la Statuaire grecque et romaine*, ii. p. 59.

from more detailed observation. The face is entirely gone. The back part of the crown of the head, however, remains, and round the lower

Fig. 31. Busts and Head of Freestone. ($\frac{1}{6}$.)

part of this there runs a well-marked ridge, which is clearly intended for hair. The bust, therefore, was bald, as statues of Silenus so often are. The baldness is of importance from another point of view. It

furnishes a direct link of connection between No. 1 and No. 3. The latter is a bearded head, 5 inches high by 4 inches broad, evidently a fragment broken from a larger whole. It has the same bald crown as No. 1. Here, however, the ridge is traceable all the way from the front. Above the temples it is so prominent that it can be distinctly made out in the illustration. In spite of the smaller size of No. 3, we cannot doubt but that, when complete, the two pieces of sculpture just described have formed a pair.

Such a correspondence is precisely what the obvious relation between the two remaining pieces might have led us to expect. That Nos. 2 and 4 were intended to be a pair, stands in no need of demonstration. While they differ slightly in size, they are very similar in character. No. 2 is 15 inches high and 11 inches broad; No. 4 is 14 inches high and 12½ inches broad. Each presents a bearded bust, with arms crossed over the chest. In the case of No. 2, however, only one of the arms has actually been chiselled. All three hands show the middle finger thrust boldly out from a closed fist. One meaning of this peculiar gesture is familiar to students of Latin literature.[1] But the *infamis digitus* had another significance. Like the *phallus* itself, it was a potent charm against the evil eye; and in this we may perhaps find a clue to the real character of the busts. So far as they were not merely ornamental, they may have served the same general purpose as the phallic symbols that the traveller of to-day sees here and there projecting above the doors of houses in Pompeii. Each of them has been carefully squared on the bottom, as if to stand upon a pillar or pedestal. The pillars or pedestals may have flanked the entrances to some of the public buildings, possibly the Storehouse, which must have had more than one door, and in connection with which the figure of Silenus would be peculiarly appropriate.

(*c*) *Miscellaneous.*—Quantities of other stones of different shapes and sizes, picked up at various points within the fort, bear evidence of human

[1] Mayor's note on Juvenal, *Sat.* x. 53, contains all the more important references.

handiwork. Fragments of the so-called 'Andernach' stone have obviously belonged to querns. But all the grinding stones were not made of this material. Two of common freestone were found complete, one of them broken in half. These last are respectively 14 and 15 inches in diameter, with a thickness of $3\frac{1}{2}$ and 3 inches at the centre. Towards the edges they become considerably thinner. Of sharpening-stones there are at least fifteen. A number of flat discs, cut for the

Fig. 32. Miscellaneous Group of Stone Objects.

most part out of freestone, suggest a homely game like quoits rather than the athletic exercise of *δισκοβολία*. They are about $\frac{3}{4}$ of an inch thick, and the diameter is generally about 5 or 6 inches, although in one instance it falls as low as $3\frac{1}{2}$. Fig. 32 shows a characteristic group of miscellaneous stone objects, including a trough, what has possibly been a saddle-quern, and the remnants of three great mortars. Mention must also be made of more than a hundred stone balls, doubtless chiefly ballista balls. They vary in diameter from 8 inches to 1 inch, pointing to the use of engines of very different degrees of power. As was stated above,[1]

[1] See *supra*, p. 423 and p. 434.

the artillery was almost certainly mounted on the ramparts. We may add here a reference to the three blocks of stone turned up by the plough on the Bar Hill in 1895. They are figured and described in the Glasgow Archaeological Society's *Antonine Wall Report*, where it is conjectured that they may have formed part of the western gateway or of some building adjoining it.[1] They have holes for posts. The illustration in the *Report* also shows several diamond-brooched stones which undoubtedly belonged to the Bar Hill buildings. They were taken out of the modern dyke to the E. of the fort.

Two large lumps of jasper, as well as a good many smaller pieces, prove the presence in the fort of material for architectural decoration.[2] Another article of interest is the major portion of a palette of greenish slate. Its full breadth is 3 inches, and its length (incomplete) is $3\frac{5}{8}$ inches. It is about $\frac{1}{4}$ of an inch thick. All round its under side the edge is bevelled to a depth of $\frac{1}{2}$ an inch. The upper side was originally flat, but it has been worn into a slight hollow by use. Similar palettes have been found elsewhere. A smaller one, made of marble, is now in the British Museum. It is from the King's Arms Yard, London. Another, also of marble, is figured by General Pitt Rivers.[3] A third, now in the Saalburg Museum, resembles the Bar Hill specimen in being made of slate, but is rather smaller. In describing it, Jacobi points out that it was probably employed for mixing salves or, it may be, unguents for toilet purposes.[4]

A curious relic is a piece of hard lime in which lies embedded what is apparently a mother-of-pearl button, $\frac{13}{16}$ of an inch in diameter, pierced

[1] *Op. cit.*, pp. 94 f. and p. 61.

[2] In this connection the following quotation from Fullarton's *Topographical, Statistical, and Historical Gazetteer of Scotland* (1842) is of some interest: "Specimens of yellow and red jasper were discovered [in the Kilsyth Hills] in 1791, or rather were then brought into notice; for the jasper, possessing a very fine grain, had even at that time found its way to the lapidaries and seal engravers of Edinburgh and London" (*op. cit.* vol. ii. p. 138).

[3] *Excavations in Cranborne Chase*, vol. i., Pl. xxi., 15.

[4] Jacobi, *Das Römerkastell Saalburg*, p. 453, fig. 71, No. 22.

with two holes. This was found 3½ feet below the surface, on the inner side of the rampart, immediately to the E. of the S. gateway. A little bit of cannel coal or oil shale, shaped somewhat like a slate-pencil, deserves passing notice. It is 1½ inches long, with squared sides, and is brought to a point at the top. It may well have been used for writing. On some surfaces it leaves a mark which is very distinct, but which can be easily obliterated by washing. The half of an armlet of shale also falls to be noted, as well as an object of the same material that is not unlike a coin-mould. The last-named was found in the Well. The circular depression is ⅛ of an inch deep, and has a diameter of ⅞ of an inch. There are faint traces of markings in the bottom; but these are too obscure to justify any expression of opinion as to what they represent. Finally, we may record a few small discs or counters seemingly of the same black composition as the *tessera* of mosaic already described.[1] One or two of them have holes in the centre. They should be compared with the similar objects made of broken pottery.[2]

### *E. Wood.*

The damp, which proved so destructive to the pottery, has exercised a kindlier influence on the vegetable remains. A twig of hawthorn got near the bottom of the Well looked as if it had been but a few months broken from the branch. From the same spot came the skin of a common 'puff-ball' (*scleroderma*). The preservation of the wood found nearer the surface was not, of course, so remarkable. But, taken as a whole, the quantity that survived was proportionately much greater than has been the case on other Roman sites excavated in Scotland. Before entering on a description of the actual objects, it will be of interest to give the names of the trees and bushes of whose presence indubitable traces came to light, sometimes in the shape of manufactured articles, sometimes through impressions of leaves, sometimes

[1] See *supra*, p. 480.

[2] See *supra*, p. 480.

through evidence from roots or fruit or branches. The following were noted :—

| | | |
|---|---|---|
| Alder | Hazel | Thorn |
| Ash | Mountain Ash | [Walnut] |
| Birch | Oak | Whin |
| Elm | Pine | Willow |

(*a*) *Structural Fragments.*—Allusion has already been made to the stumps of posts found in the post-holes. They numbered considerably over a hundred, and were all of oak. Thirty pieces of the same wood were recovered from the Well. They varied in size from 9 feet long by 6 inches broad by 5 inches thick down to 1 foot long by 3 inches broad by 2 inches thick. Some of them are unmistakably charred with fire (fig. 33, Nos. 9, 12, and 13), an indication of the fate that overtook the fort when it was abandoned. All had probably been used for structural purposes, although the proof of this was plainer in some cases than in others. Fig. 33, No. 1, is a good illustration. With it may be classed a remarkable oak plank from Refuse-Hole No. 1. It is 3 feet 8 inches long by 7 inches broad by $1\frac{7}{8}$ inches thick, and is perforated with seven square holes, ranged in line. The holes are each about $1\frac{1}{4}$ inches square, and the distance between them is 7 inches from centre to centre. The upper portion of the overhead beam of the Well, with cleft to admit the pulley, is clearly recognisable (fig. 33, No. 7). The part that has survived is about 19 inches long, the cleft being about 12 inches deep. Immediately above the cleft is a hole, $2\frac{1}{2}$ inches in diameter, through which there must have passed a timber support of some sort. On the more complete of its two sides can be seen one of the small holes that received the ends of the axle of the pulley-wheel. Two pieces of the pulley itself were also found. Placed together as they are in the illustration (fig. 33, No. 10), they show that the original diameter was about 10 inches.

(*b*) *Wheels.*—Among relics that may be roughly called non-structural, the most conspicuous is a splendid specimen of a chariot wheel, dis-

Fig. 33. Miscellaneous Group of Wooden Objects.

covered absolutely intact,[1] 8 feet below the surface in Refuse-Hole No. 6. Fig. 34 conveys a good idea of its general appearance, although it rather fails to give the full effect of the relatively large 'hub.' The outside diameter is 2 feet $10\frac{1}{2}$ inches, while the nave measures $14\frac{1}{2}$ inches from end to end, and has a diameter of $9\frac{1}{2}$ inches at the centre and of $6\frac{1}{4}$ inches at the ends. The felloe, which is of ash, is formed of a single piece of wood, artificially softened and then bent into a circle; there is therefore only one joint, and the same grain runs all the way round. The spokes, which are of willow, are eleven in number. They are beautifully turned with the lathe, and are carefully tenoned into felloe and nave, the mortise-holes in the former being round, while those in the latter are partly squared. The whole is firmly bound together by the iron ring that forms the tire. The nave is probably of elm. Like the felloe, it is shod with iron, and is also 'bushed' inside with the same metal. The pattern of inlaid iron on either end of it seems to be purely decorative.

Remains of similar wheels have been found elsewhere. A nave with fragments of spokes was discovered at the pre-Roman Lake-Village near Glastonbury. When whole, the Glastonbury wheel must have had twelve spokes. The dimensions indicate that, all over, it had been slightly larger than the present example; the diameter, without felloe, had been $30\frac{7}{8}$ inches. The nave, however, which was without iron or ornament of any kind, was smaller; its greatest length was $13\frac{7}{8}$ inches and its greatest diameter $7\frac{7}{8}$ inches. The various parts were lathe-turned and highly finished.[2] Portions of several wheels have also come to light at the Saalburg.[3] But even the most considerable of these is not nearly so well preserved as the Bar Hill specimen. It has only had ten spokes, and, as at Glastonbury, the felloe is awanting.

[1] Unfortunately, in spite of every effort to raise it with the minimum of vibration, the spokes collapsed as soon as they lost the support of the ground.

[2] For these particulars we are indebted to the kindness of Mr Arthur Bulleid, the discoverer.

[3] Jacobi, *Das Römerkastell Saalburg*, pp. 172 and 447, with Tafel lxxx., No. 1.

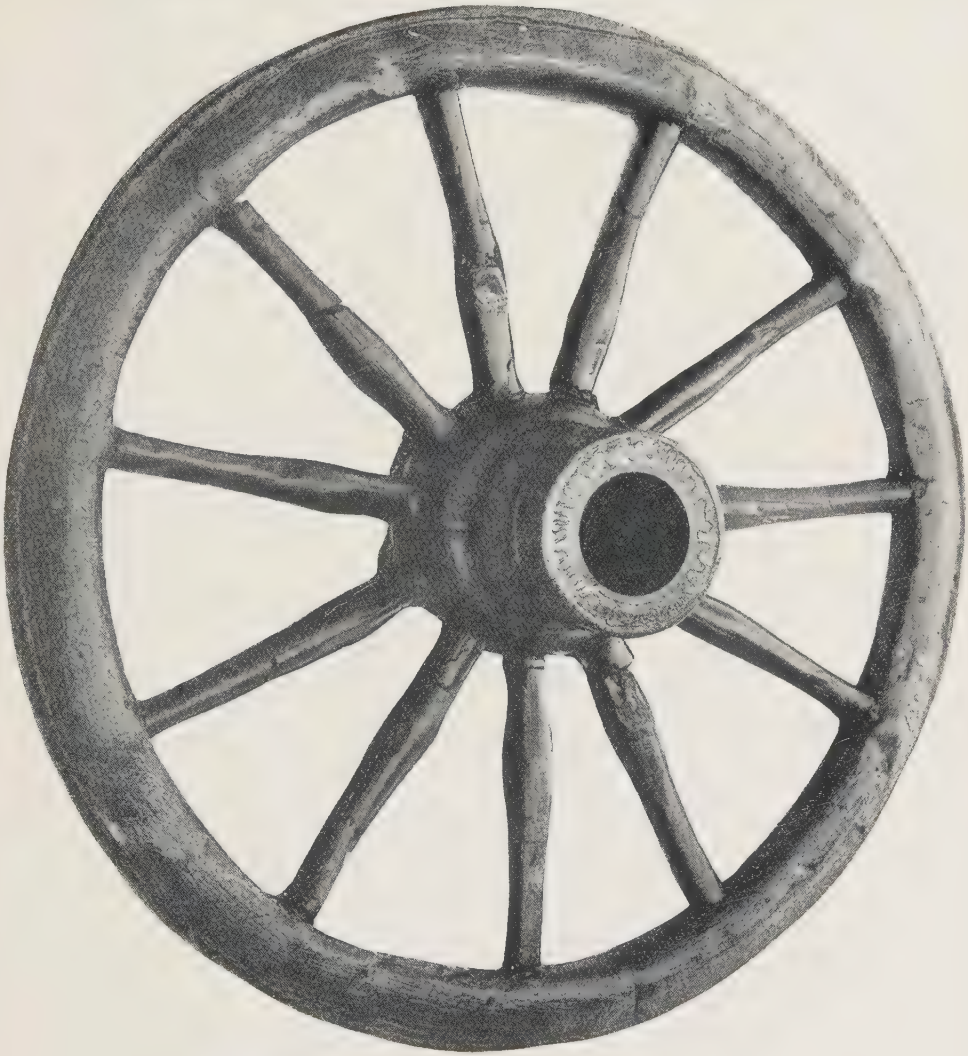


Fig. 34. Chariot Wheel. ($\frac{1}{6}$.)

More important for purposes of comparison is a ten-spoked wheel found at La Tène, along with other remains of a chariot,[1] in the year 1882. This was considerably larger than any yet mentioned. Its outside diameter was 3 feet $2\frac{1}{2}$ inches, while the nave was about 2 feet

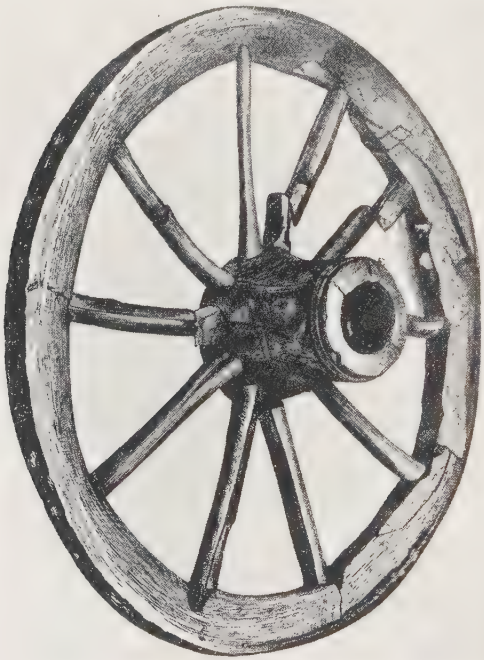


Fig. 35. Wheel from La Tène. ($\frac{1}{1\frac{1}{2}}$.)

long. As can be seen from fig. 35, the La Tène wheel was inferior in finish to that shown in fig. 34. The nave was made of two symmetrically shaped halves which were held in place by iron hoops. The spokes were of oak (as they seem to have been at Glastonbury also), and of

[1] See Victor Gross, *La Tène, un Oppidum Helvète* (Paris, 1886), pp. 33 f.

comparatively rude workmanship. But the chief feature of interest is that here, as at Bar Hill, the felloe was entire, and that here too it was formed of a single piece of ash, bent. At one point there had been a fracture, which had been cleverly mended with a bit of iron and a nail. For the closest analogy of all, however, we must return to Scotland. The excavations now in progress (1906) at Newstead, near Melrose, have yielded two wheels, complete but for portions of the spokes. In their details they bear a very strong resemblance to that from Bar Hill. The main difference is the absence of the inlaid iron decoration on the ends of the nave.

This difference emphasises the superior make and style of the Bar Hill example. It is perhaps justifiable to conclude that the latter had belonged to a vehicle of more than usual importance. In any event its presence at the bottom of a refuse-hole is curious. Had it been worn and broken, there would have been an intelligible motive for throwing it aside. But the very reverse is the case. It must have been in the best of condition when tossed into its strange hiding-place. Why was it treated as a thing of nought? The possibility at once suggests itself that it may have been native, not Roman—the relic of an assault repelled or of some stricken field. The suggestion is one which, on its merits, it would be dangerous to push too strenuously. On the other hand, it forces us to ask: Is there any proof that the wheel is really of Roman workmanship? And to this the reply must, in the meantime, be in the negative. We may go further. There are indications that the burden of such proof would be heavy.

It is true that the Greeks, and *a fortiori* the Romans, were familiar with the process of curving wood to form the felloes of wheels. In one of his similes Theocritus introduces the picture of a coachbuilder who uses heat to bend the young branches of the wild fig-tree to his purpose.[1] Even in Homer there is possibly a hint of something of the kind.[2] But bronze enters largely into the construction of the actual remains of chariot-wheels discovered in Mediterranean countries—at Canino, at

[1] Theocritus, *Id.* xxv. 247 ff.

[2] *Iliad*, iv. 485 f.

Perugia, at Toulouse.[1] All the wooden wheels cited above have been found in Northern Europe. At La Tène the association was entirely Celtic, and the Glastonbury Lake-Village is incontrovertibly pre-Roman.[2] Again, there is no ground for supposing that the Romans employed chariots in warfare, and Bar Hill was a military station. On the other hand, the war-chariot was, according to our literary authorities, a characteristic feature of the equipment of ancient British armies.[3] If we can trust Tacitus, Galgacus had a large contingent under his orders at the battle of Mons Graupius.[4] These are considerations of which account would require to be taken in framing a judgment. Meanwhile it hardly needs to be pointed out that, if one could assume a 'Caledonian' origin for the Bar Hill wheel, the resulting glimpse of the early civilisation of North Britain would be most illuminating.

Apart from chariots, wheeled vehicles were no doubt common enough in and about the fort. At Rough Castle few things were more striking than the deep ruts worn in the stones of the street that passed out of the southern gateway. They were eloquent of the continuous traffic that must have come and gone during the years of occupation. Bar Hill supplies a relic of the ordinary work-a-day waggons in which much of this traffic was probably carried on. Certain fragments from the N.W.

[1] See Bromet, "Notices of the Remains of a Roman Chariot preserved in the Museum at Toulouse," in the *Proceedings of the Archaeological Institute* (*Oxford Meeting*), 1850, pp. 131 ff. For similar wheels found in Austria, see *Sitzungsber. der kaiserl. Akademie der Wissenschaften: Phil.-hist. Klasse*, Bd. vi. (Vienna, 1851), p. 282, Taf. xix.

[2] No tradition is more persistent than that which attaches to tools and to the methods of manufacturing articles of common use. In that light it is perhaps not without significance that to this day there are portions of the Russian Empire where the felloes of large wheels are fashioned in the precise manner exemplified at Bar Hill, at Newstead, and at La Tène. Several fine examples, with a diameter of fully 3 feet, are to be seen in the Glasgow Corporation Galleries at Kelvingrove. They were made in the Russian section of the International Exhibition of 1900. But we have not been able to ascertain from what district of Russia the makers came.

[3] See particularly Cæsar, *De Bell. Gall.*, iv. 33. The belief that the British chariots had scythes is much less well authenticated (Pomponius Mela, iii. 6, 52, and Silius Italicus, *Punic*, xvii. 417).

[4] *Agricola*, c. 35.

corner of the outer ditch enable us to reconstruct with tolerable certainty an entirely different type of wheel from that which we have been discussing. The fragments in question are all of oak. What they suggest is a twelve-spoked wheel, 3 feet 2 inches in diameter, in the construction of which no iron at all has been used. The felloe, instead of being formed of a single piece, has consisted of six distinct sections or 'treads,' attached to one another by wooden dowels. One such section, with the corresponding spokes, has been preserved entire; see fig. 33, No. 4. It is 19 inches long by about $2\frac{1}{2}$ inches broad. The spokes measure rather more than 16 inches from end to end, and the inner extremity of each has been tenoned into the nave to a depth of 3 inches, while the outer extremity is driven right through the felloe and made to project a little way beyond its outer surface. The series of knobs thus produced served one of the objects of an iron tire. They helped to save the body of the felloe from the wear and tear of immediate contact with the ground. There was deliberate intention here, as is plainly shown by the presence of an additional knob just midway between the two ends of the spokes. The third projection is formed by a small dowel about $1\frac{1}{2}$ inches long, driven into the outer side of the felloe. In the circumstances it is, of course, impossible to say whether the device was repeated in each tread all the way round, or whether it was merely a precautionary measure of repair adopted at a particular point which had begun to betray signs of weakness through usage. Considerable portions of the nave also survive (fig. 33, Nos. 2, 3, 5, and 11). From them we can estimate the original diameter of this part of the wheel at 12 inches, and can see that its construction was comparatively primitive. It was solid, and the axle revolved with the wheel.

(*c*) *Barrels.*—Barrels are responsible for another interesting set of oaken fragments. The originals have been markedly small, in strong contrast with the huge tuns found at Silchester in 1896.[1] One example, complete save for the head and the hoops, was discovered in the ditch on

[1] *Archaeologia*, vol. lvi., Pl. viii.

the W. side of the N. gateway. There were fourteen staves, each with a length of between 13 and 14 inches and a maximum breadth of 2 inches (fig. 33, No. 14). When set up, they gave an inside depth of $12\frac{1}{2}$ inches and a maximum diameter of 8 inches. The diameter of the bottom was only just over 5 inches. One of the staves, the uppermost in the illustration, has scratched upon it the name

Three barrel-heads came from Refuse-Hole No. 9, and another was picked up in a different part of the fort. The diameter of the largest is $5\frac{3}{4}$ inches, that of the smallest $3\frac{1}{4}$. The bung-holes range in diameter from $1\frac{1}{4}$ inches to $\frac{5}{8}$ of an inch. A wooden bung was taken from the detached ditch in front of the E. gate.

(*d*) *Miscellaneous.*—A few stray pieces of wooden piping were found in the N. ditch. They are probably of willow, and they have had a diameter of about $\frac{3}{4}$ of an inch. As they were lying close to the Baths, it seems likely that they had some connection with the water-supply there; but they were so few in number and so small that it is idle to speculate regarding their exact purpose. A specimen is shown in fig. 33 (No. 8). Mention must also be made of a wooden bobbin (fig. 24, No. 6). It was lying 7 feet below the surface, immediately above the large wheel, in Refuse-Hole No. 6. When it first came to light, there were still some pieces of thread adhering to it. In shape it has a general resemblance to the corresponding modern article. It is $1\frac{5}{8}$ inches in height, and has a diameter of $\frac{5}{8}$ of an inch at the centre and 2 inches at either end. A little round box of willow wood from Refuse-Hole No. 9 is also interesting (fig. 33, No. 6). It is beautifully turned with the lathe, and has its upper edge grooved for the reception of a lid. It is $1\frac{3}{4}$ inches deep by $1\frac{1}{2}$ inches in diameter. Then there are two combs,

originally about 6 inches long, but now much shrunk through exposure to the air. One is from Refuse-Hole No. 1, the other from the N.W. corner of the outer ditch. In appearance they resemble the modern 'small-tooth' comb, and the neatness and care with which they have been cut are remarkable. In each case, one of the two rows of teeth is decidedly finer than the other. Lastly, several handles of tools were recovered in a more or less complete condition. One had the iron ferrule still adhering to it. In another instance—a bradawl—the metal blade was actually in position.

### *F. Leather.*

The collection of cast-off articles of ancient footgear is extraordinarily rich, amounting in all to some three or four hundred specimens, gathered partly from the refuse-holes and partly from the ditches. An exhaustive classification of these under their proper Latin names does not appear to be possible. Rome and its neighbourhood naturally dominate the literary tradition, and the same is true of much of the evidence that has been drawn from works of art. But the garrison of the Bar Hill fort was composed of Romanised provincials, not of Romans. It would not be reasonable to look for all the *modes* of the capital in the remnants of their dress. Besides, the climatic conditions of North Britain were severe. Combined with the scarcity of well-made roads or streets, they must have exercised an influence before which fashion itself would have to bow. In one respect, indeed, the reflection of Roman life is accurate and enlightening. The variety of pattern displayed by the remains, no less than the elaboration with which some of the individual examples are decorated, accords completely with the testimony of literature. Among the Romans, just as among the Greeks, money and ingenuity were freely lavished on the covering of the feet. The cut of a shoe might express a very real social distinction. Beyond this, and the possible influence of climate, the material now to be described has no general lesson to teach. In the meantime, it can best be judged by itself. Comparison even with the Saalburg finds shows a wide difference in custom.

Keeping this *caveat* in view, we may divide the footgear from Bar Hill into three main groups. The first corresponds to the *solea* or sandal proper. This is represented by a single example, which has been worn on the right foot of a lady or a youth (fig. 36, No. 9). It consists of five layers of leather carefully cut to shape—even the toes are indicated—and then fastened together, seemingly by some strong adhesive. It is studded with heavy nails. At one point between the layers space has been left for inserting a strap or thong that crossed the instep. A loop on the inner sole shows that the fastening was completed by a second thong that passed between the great toe and the toe next to it, and was then brought up the centre of the foot to join the ankle-thong. There has been no upper of any kind. So light a protection would be ill adapted for out-of-door use in Scotland, unless perhaps in the height of summer. Hence, we may suppose, its rarity.

The second group consists of broad, flat shoes such as are shown in fig. 36, Nos. 1 and 4. These are not very numerous,[1] but their occurrence in various sizes proves that they must have been worn not only by men, but also by women and by quite young children. Their leading characteristic is that each specimen is made of a single piece of leather. Except for a vertical line of stitching at the back of the heel, they are seamless. Perhaps they should be described as *carbatinae*.[2] The soles are always smooth and without nails. Hardly any two examples are alike in their upper parts. Usually the leather is cut into loops, through which we may suppose the laces to have run. The toe is often a series of narrow strips with an eyelet at the top of each. In one case there is a double layer of leather throughout. In another an inside sole has been used. In yet another the heel is strengthened by a 'counter.'

[1] This is one of the respects in which there is a marked contrast with the Saalburg finds. See Jacobi, *Das Römerkastell Saalburg*, p. 497.

[2] See F. Haverfield, *Classical Review*, 1898, p. 142. A rather rude example from Chesters is figured in the *Cumberland and Westmorland Ant. and Arch. Society's Transactions*, N.S., v. p. 303. Similar shoes are still worn in some parts of Europe. See Haverfield, *l.c.*

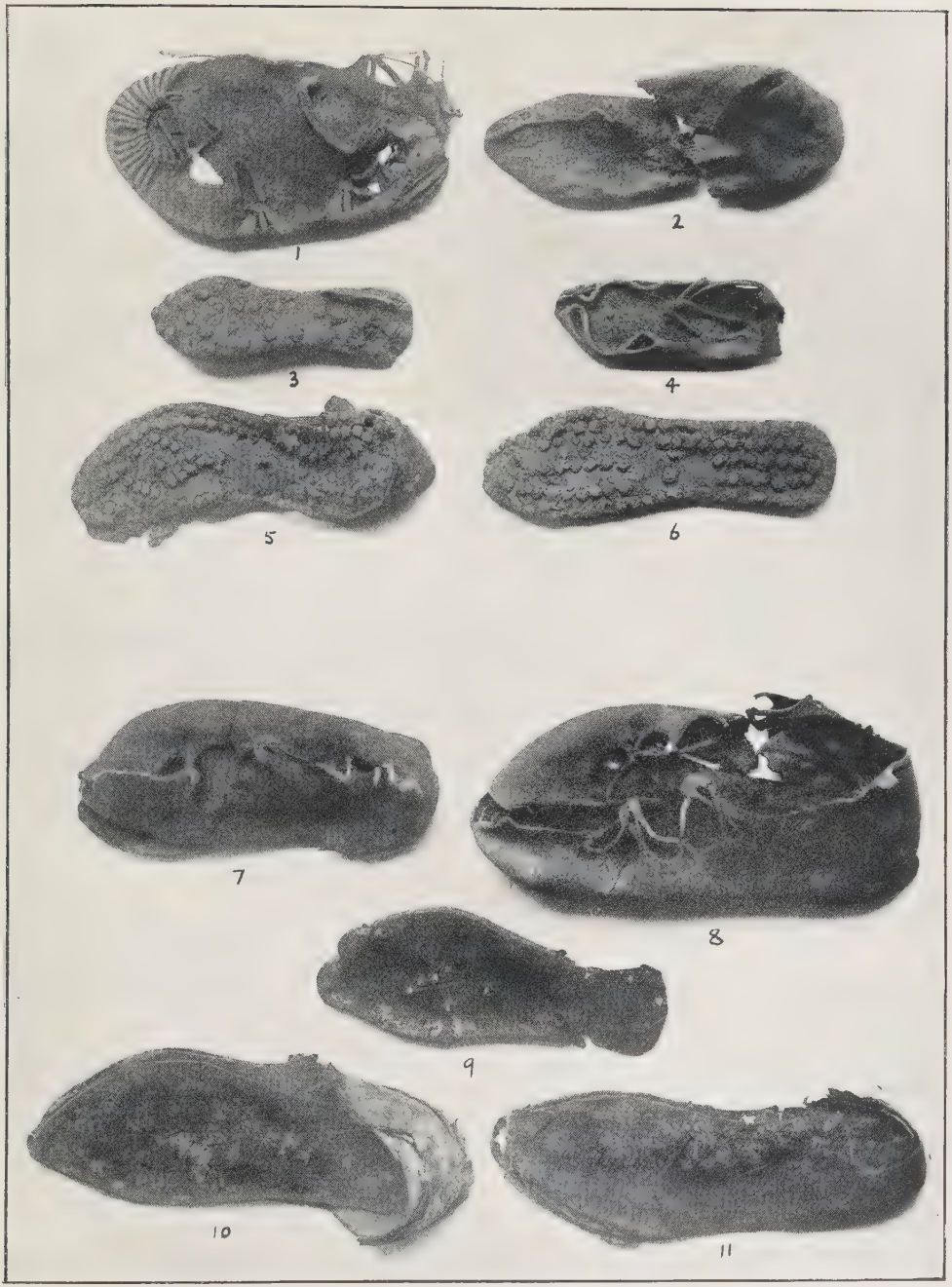



Fig. 36. Footgear of Various Types.

The third group approximates more nearly to the modern shoe. Sole and upper are quite distinct. Like the preceding, this type appears to have been worn by persons of both sexes and of all ages. It was clearly intended for out-of-door use. The soles are formed of several layers, generally four or five, and the precaution of studding them with heavy nails is never neglected even in the smallest sizes. The nails are sometimes arranged in decorative patterns, as on the lady's (or boy's) shoe

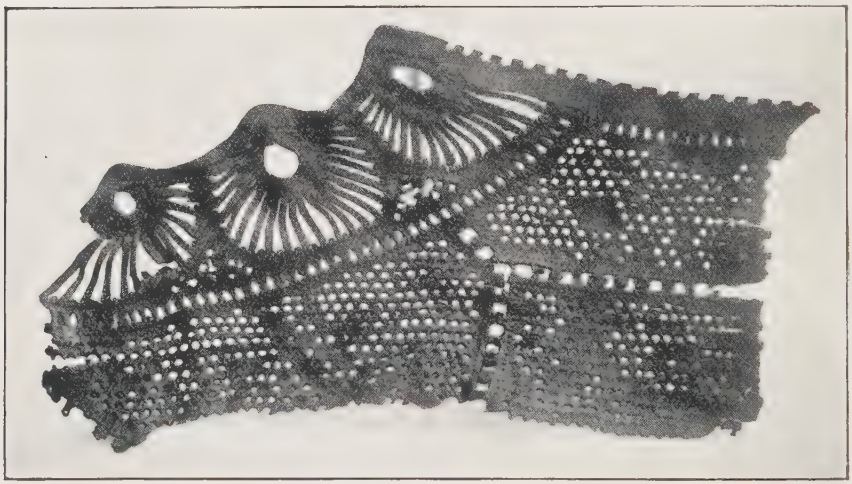


Fig. 37. Portion of Upper of Lady's Shoe.

represented in fig. 36, No. 5. The absence of any raised heel should be observed. Fig. 36, No. 3, is especially interesting. It must have belonged to a child of nine or ten. To correct some slight lameness, an iron support about 2 inches long and $\frac{1}{4}$ of an inch high has been driven in beneath the right side of the ankle. As will be seen from the specimens illustrated, there is great variety of pattern among the uppers. One extreme is represented by the solid leather of fig. 36, Nos. 7, 8, and 11, another by the delicate fretwork of fig. 37. Fig. 38

shows examples (mounted on modern 'trees') of what we may consider as the medium, in all three sizes.[1]

The fastenings must have been very substantial. This is plain from the size of the openings left in the upper for their insertion. They resemble buttonholes rather than mere eyelets for laces. The explanation, no doubt, lies in the strain that would be produced by the heavy weight of the nail-studded soles. The method of attaching upper to sole

Fig. 38. Man's, Woman's, and Child's Shoe.

was also well adapted to meet this difficulty. There was no stitching. Instead, the lower part of the upper—to the depth of about an inch all the way round—was thrust in between two of the layers forming the sole, and was presumably subjected to the process by which the various layers were made to adhere. Fig. 36, No. 8, is but one of many examples that show how the final touch of security was given by making some of the nails pass through upper and sole alike.

Possibly the shoes we have been describing would have been called

[1] These specimens were set up for Mr Whitelaw at the Ashmolean Museum, Oxford.

*calcei*. It is probable that they were worn by the officers and the more well-to-do among the non-combatants. Yet they do not quite correspond to the *calceus* as ordinarily understood. Nor is the evidence sufficient to enable us to distinguish with any clearness between them and what must have been the footgear of the common soldier. Sheer force of numbers compels us to find the *caliga*, or private soldier's shoe, in the type represented by fig. 36, No. 10. Generically it belongs to our third group. The relation between sole and upper is the same as in the *calcei*. The construction of the sole, too, is the same, and there are the same heavy nails. But in practically every one of the scores of examples the upper has almost entirely disappeared. When any considerable vestiges are left, it is always at the heel that they are found. Their survival there is due to the extra protection afforded by the 'counter'—a stiff piece of leather inserted behind to provide the shoe with a strong back. At the best, however, the remnants are so scanty that we cannot say in any case what the original appearance of the whole may have been, and we are equally doubtful as to the nature of the fastenings and as to the manner in which they have been arranged.

In some of the better-preserved specimens of *calcei* leather laces were found still in their place. A few other objects of leather remain to be enumerated. An interesting relic is a bag or satchel—virtually entire, with its carrying strap—measuring 15 inches long by 12 inches deep. At the two ends and on each side of the mouth, as well as along the carrying strap, it is very neatly stitched in herring-bone pattern with double-thong leather. A portion of a belt, 2 feet long by $1\frac{1}{4}$ inches broad, shows stitching along the centre and also at each side. A piece of double leather, $11\frac{1}{2}$ inches long by 3 inches deep, scalloped to a depth of $2\frac{1}{2}$ inches and stitched along its lower edge, may have belonged to the fringe of a tunic or to the trappings of a horse. Loose pieces of leather, of various sizes and qualities, are numerous. One of the largest of these, 2 feet 2 inches long by $1\frac{1}{2}$ feet broad, may have been an apron. It was found in Refuse-Hole No. 9, with a 6-foot length of hemp rope rolled up inside of it.

### *G. Coins.*

Stuart, in his *Caledonia Romana*, speaks of Roman coins having been picked up on the site of the Bar Hill fort. He specifically mentions "*denarii* of Trajan, Hadrian, and Antoninus Pius, in the highest state of preservation," which "were procured by Professor Anderson, and are now deposited in Glasgow in the museum of the institution which bears his name."[1] These pieces are no longer traceable, and we must therefore be content with Stuart's vague description. Of the coins found in the course of Mr Whitelaw's excavations, four are probably Scottish. They are of copper and are absolutely illegible, but their size and appearance suggest that they belong to the seventeenth century. If we set these aside, and also certain corroded fragments (indubitably Roman) from the Baths,[2] there remain twenty-seven which must be connected with the presence of the Roman garrison. In the following list the specimens taken from the Well[3] are indicated by an asterisk :—

I. Denarii.

M. Antony (*circa* 35 B.C.)

| | | No. of Specimens. |
|---|---|---|
| 1. | *Obv.* ANT·AVG (above), III·VIR·R·P·C (beneath). Praetorian galley with rowers. | 1* |
| | *Rev.* Inscription illegible. Roman eagle, flanked by two standards. | |

Vespasian (69–79 A.D.)

| | | |
|---|---|---|
| 2. | *Obv.* [IMPC]AESVESPAVG[PM] Head of Vespasian r., laureate. | 1* |
| | *Rev.* AVGVR (above), TRI·POT (beneath). Instruments of sacrifice. | |
| 3. | *Obv.* IMPCAESAR VESPASIANVSAVG Head of Vespasian r., laureate. | 1 |
| | *Rev.* COS VIII Mars, helmeted, standing l., holding trophy and spear. | |

[1] *Op. cit.* (second edition), p. 338.

[2] See *supra*, p. 448.

[3] See *supra*, p. 411.

Domitian (81–96 A.D.)

No. of Specimens.

4. *Obv.* IMPCAESDOMITAVG GERMPMTRPXV Head of Domitian r., laureate. 1*
*Rev.* IMPXXIICOSXVIICENSPPP Minerva standing r. on prow, in attitude of attack.

Nerva (96–98 A.D.)

5. *Obv.* IMPNERVACAES AVGPMTRPOT Head of Nerva r., laureate. 1
*Rev.* COSIIIPATERPATRIAE Instruments of sacrifice.

Trajan (98–117 A.D.)

6–8. *Obv.* IMPTRAIANOAVGGERDACPMTRP Head of Trajan r., laureate. 3*
*Rev.* COSVPPSPQROPTIMOPRINC Hope standing l.
9–13. *Obv.* IMPTRAIANOAVGGERDACPMTRPCOSVIPP Head of Trajan r., laureate. 5*
*Rev.* PAX (beneath), SPQROPTIMOPRINCIPI Peace standing l., holding cornucopiae on l. arm, and with r. setting fire to a heap of booty.
14. Variety doubtful.

Hadrian (117–138 A.D.)

15. *Obv.* HADRIANVS AVGCOSIIIPP Head of Hadrian r., laureate. 1*
*Rev.* SALV SAVG Health standing r., feeding serpent twined round altar.
16. *Obv.* Similar, but emperor bare-headed. 1
*Rev.* Similar.

M. Aurelius (161–180 A.D.)

17. *Obv.* AVRELIVSCAESAR AVGPIIFCOS Youthful head of M. Aurelius r., bare. 1*
*Rev.* PIETASAVG Instruments of sacrifice.

Uncertain.

18. Probably Trajan. 1
19, 20. Probably Hadrian. 2
21. Probably Antoninus Pius. 1
22. Undecipherable. 1

II. 'First Brass.'

Trajan.

No. of Specimens.

23. Variety doubtful. 1

Hadrian.

24. *Obv.* IMPCAESARTRAIANVS HADRIANVSAVG 1
Bust of Hadrian r., laureate.
*Rev.* PONTMAXTRPOTCOS - - Fortune seated l.; in ex., FORT RED; in field, S. C.

III. 'Second Brass.'

25–27. Undecipherable. 3

One or two of the coins in the preceding list might conceivably have been lost by the soldiers of Agricola; but the great majority of them certainly speak to us of the second invasion. Taken as a whole, they are just what we should look for under the circumstances. The evidence collected by Mr Haverfield[1] shows that (with the exception of the legionary denarii of Antony, for the survival of which there were special reasons) the Roman silver and bronze coins found in Scotland are, as a rule, not earlier than Nero and not later than Commodus. We know approximately upon other grounds the date when the Antonine fort was built (*circa* 140 A.D.). The coins found here and elsewhere on the line of the Vallum furnish a strong presumption that the whole work was abandoned before the close of the second century. We may thus venture to fix the period of continuous occupation at some forty years.

Apart from this general inference (which is not in itself new), the Bar Hill coins provide interesting material for the historian. Thirteen of the denarii were taken out of the well. Ten of these thirteen are made of pure tin, and have been run in moulds, not struck. The tin coins are quite unlike the work of ordinary forgers, since they can never have been intended to pass current as silver. Their light weight and the softness of the metal—they can readily be bent with the fingers—would have led to instant detection. Furthermore, the fact that in one

[1] *The Antonine Wall Report*, pp. 159 ff.

case five, and in another case three, of the ten have been cast in the same moulds, shows that they cannot have found their way from a distance to North Britain in the ordinary process of trade. On the other hand, it is in the last degree unlikely that a forger would have selected as a convenient centre for the exercise of his activity a small military outpost on the very fringe of civilisation. The clue seems to lie in the character of the 'find-spot.' The throwing of money into wells or rivers from superstitious motives is a very familiar phenomenon. The tin denarii may have been shams expressly manufactured for devotional purposes. This would give a fresh significance to the prohibition in the *Digest* (xlviii. 10)—"*ne quis nummos stanneos, plumbeos emere, vendere dolo malo velit.*" What is there forbidden is not the manufacture of tin coins, but their being fraudulently passed into circulation.[1]

### *H. Other Objects of Metal.*

Apart from the coins, the finds did not include a single object in either of the precious metals. Taken in conjunction with the almost entire absence of personal ornaments, this is significant. It would seem to indicate that the life of the fort had been very simple. When the troops were withdrawn, a strenuous effort would no doubt be made to remove everything of value. But a search carried out under such circumstances could not possibly have extended to the accidental losses that must have occurred during the years of occupation. Yet it was not so much the desire for display that was lacking as the means to gratify it; several of the articles in bronze have been treated in a manner that gives them a superficial resemblance to gold or silver.

[1] The view of the tin coins put forward in this paragraph was set forth at greater length in a paper in the *Numismatic Chronicle* for 1905 (4th series, vol. v. pp. 10 ff.). To the references there given must be added a paper by F. Gnecchi on "Le Monete di Stagno" in *Riv. Ital. di Numismatica*, 1905, pp. 166 ff. Comm. Gnecchi accepts the suggestion that the Bar Hill coins are shams for devotional purposes. He mentions that he has had an analysis made of a certain number of pieces in his own possession, which were recovered from the Tiber, and that all of these proved to be of tin.

(*a*) *Iron.*—As might be expected, iron is the commonest metal. Many of the fragments are evidently part of the debris of buildings. Some of them are rusted beyond hope of recognition; but there are a good many the original character of which can still be satisfactorily determined. Nails and holdfasts, of various sizes and patterns, occurred frequently. A few are reproduced in the miscellaneous assortment of iron objects which will be found in fig. 39. Fifty-six pieces of 3-inch strap iron from the Well, placed end to end, give a total length of 47 feet. They are, on the average, $\frac{3}{16}$ of an inch thick, and are pierced at intervals for the passage of nails or bolts. Apparently they have at one time been very firmly attached to wooden beams. In a few cases the large nails or bolts are in their original position, held fast in place by rust. Two characteristic specimens of this strapping are illustrated in fig. 39, No. 6. Other pieces of flat iron, somewhat narrower and thinner, but likewise perforated for fastenings, may be the mountings of doors (fig. 39, Nos. 7 and 20). They, too, came from the Well, along with a latch $4\frac{1}{2}$ inches in length. The interesting group which is represented by fig. 39, Nos. 9 and 10, and which is also from the Well, should probably be connected with the framework of some of the windows in the buildings of the fort. The spikes have been riveted on to pieces of flat iron, as shown in No. 10, and their purpose would be to hold the panes of glass in position. Similar objects have been found at Pompeii, at Epinay in France, and also in one of the forts on the German *Limes*.[1]

The hoops belonging to the draw-bucket of the Well itself are illustrated in fig. 39, Nos. 1–5. There appear to have been seven of them in all. The topmost one (No. 2), recognisable by the 'eyes' for the rope, has a diameter of 14 inches. The corresponding dimension of the smallest is 12 inches, indicating that the taper on the bucket had been fairly gradual. No. 17 of the same figure is clearly the ferrule of a tool

[1] The interpretation given above is that of Liger (*La Ferronerie*, Paris, 1875, vol. ii. pp. 241 f.). On the other hand, the object from Kastell Pfünz on the *Limes* is classed by Winkelmann as a door-mounting (*Der Obergermanische-Raetische Limes*, Lief. xiv., Taf. xviii. 7, and p. 26).

Fig. 39. Group of Iron Objects, mostly from the Well.

handle; the larger iron rings beside it (Nos. 16 and 21–23) may conceivably have belonged to the naves of wheels. It is not worth while speculating on the original association of detached hooks like No. 25. A buckle (No. 15), $3\frac{1}{8}$ inches long by $1\frac{1}{2}$ inches broad, is perhaps the remnant of a harness strap. A bridle-bit (No. 24), $5\frac{1}{4}$ inches long, with closing cleeks at either end, is curiously like its counterpart of to-day. The resemblance is even more striking in the case of another type of mouthpiece for a horse (No. 13).

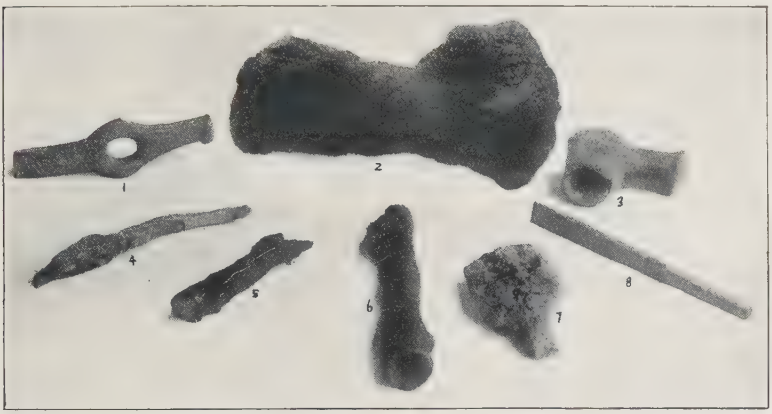



Fig. 40. Iron Tools and Weapons.

The tools and implements include a fragment of a sickle (fig. 39, No. 8), a much rusted axe-head (fig. 40, No. 2), a bradawl in its wooden handle, the leg of a pair of compasses, at least one mason's wedge, a pointed chisel, and two chisels with square faces. The chisels have had no handles, the top in each case bearing the marks of the mallet. The example shown in fig. 40 (No. 8) is $6\frac{1}{2}$ inches long, and measures $\frac{1}{2}$ an inch across the face. Immediately above it in the illustration is a hammer-head (No. 3), one end of which has been broken away. A second, but rather smaller, hammer-head is complete (No. 1); it has a length of $5\frac{1}{4}$ inches, and is excellently made. An interesting feature

which it displays is the following inscription, scratched upon the upper side of its staved end, and indicating that the hammer had belonged to "the century of Ebutius."

Not all the tools admit of such ready identification. Among the more puzzling is a curious punch. The point, which has been square, is chipped away. The full length of what remains is 3 inches, and its squared and tapered shape rather resembles that of a heavy club, the girth at the thickest part being 2 inches. The metal is particularly hard, and has not rusted in any degree. Another strange implement is a piece of equally hard metal, 7 inches long, which looks like a screw bit. It is square for rather more than an inch at its upper end, and then round for the whole way beneath. On its lower portion, which tapers to a point, is a series of circular markings—a good deal worn, but apparently graded downwards, exactly as if its purpose had been to thread small screw nuts. Like the punch, it is free from rust. Rust, on the other hand, has played an important part in the preservation of one of the most remarkable of all the relics—the mass of wrought iron shown in the centre of fig. 39 (No. 14), and again separately in fig. 41. This was found inside a large fragment of the great amphora, discovered 38 feet down in the Well.[1] It is 25 inches long by about 10 inches at its broadest. That it retains its present form is due to cohesion induced by rusting. But its present form must be substantially that which it had when it was originally lost; the marks on the outside prove that it represents the contents of a bag which had at some time fallen or been thrown into the water. The folds of the bag, and the very grain of the material of which it was made, are still distinctly visible upon the surface. Here and there minute fragments of rust-covered thread can be detached. It is not possible to say much regarding the individual objects that the bag had contained. The

[1] See *supra*, p. 411 and p. 469.

majority seem to be large nails and holdfasts, but there is one which bears some resemblance to a pair of pliers.

Weapons are far from common. The tang of the handle of a bronze-mounted knife or dagger, with a portion of the wooden grip adhering (fig. 39, No. 12), was found 2 feet below the surface in the N.W. corner of the fort. A much rusted piece of iron from the Well may be a sword-blade, and there are several more or less fragmentary spear-heads. Two of the latter have been socketed on to the shaft (fig. 40,

Fig. 41. Bag of wrought iron from the Well. ($\frac{1}{6}$.)

Nos. 5 and 6). In the case of another (fig. 40, No. 7) the stem is solid. A piece of round-backed iron, 1 foot 5 inches long, pierced at intervals for nails, may have been used for 'stiffening' the leather of a shield (fig. 39, No. 19).

We have learned from the inscriptions that at one period there were Syrian bowmen in the garrison.[1] It is doubtless with the presence of this contingent that we should connect seven three-winged arrow-heads sifted out of the muddy deposit in the bottom of the Well. Two of these are reproduced in actual size in fig. 42 (Nos. 1 and 3). The

[1] See *supra*, p. 487.

workmanship is very good.[1] In the centre of the same illustration (No. 2)—and also in actual size—is one of the best preserved of five other objects found in close association with the arrow-heads. Like the latter, the five vary somewhat in their dimensions; like them, too, they are brought to a point at one end, and have three projecting wings. They are, however, open in the centre. Can they be the heads of arrows

Fig. 42. Arrow-heads, etc., from the Well. (¼.)

used for carrying fire? Such weapons were familiar to both Greeks and Romans. Pollux mentions *πυρφόροι ὀϊστοί* as a well-recognised class of arrows;[2] and Dio Cassius relates that, in the crisis of the battle of Actium, Octavius endeavoured to set Antony's ships ablaze by a shower

[1] It should be compared with that of the two isolated arrow-heads found at Housesteads (*Arch. Ael.*, xxv. p. 290, fig. 48). The eight hundred examples discovered in the Praetorium there were of much coarser make. *Cf.* also Jacobi, *Das Römerkastell Saalburg*, Taf. xxxix. 31.

[2] *Onomasticon*, i. 137.

of fiery shafts (*βέλη πυρφόρα*).[1] If this conjecture (for it is only a conjecture) be accepted, it is not difficult to imagine the method of use. A tuft of tow, steeped in pitch or other inflammable material, would be firmly twisted into the open iron framework at the point; this would be lighted before the arrow was discharged, and the fire would be fanned into a great flame by its rapid passage through the air.

The group distinguished as No. 18 in fig. 39 calls for some discussion. The twenty-two wedge-shaped articles that compose it were recovered from the Well. Each consists of a square head and a short square tang, the latter invariably broken. The head tapers to a point, and in every instance the point has been bent and blunted by use. There is considerable variation in the sizes. The heads are from $1\frac{1}{4}$ to $2\frac{3}{4}$ inches long, and from $\frac{1}{2}$ an inch to 1 inch square at the thickest part; the tangs are usually about $\frac{3}{8}$ of an inch square. When they were first found, the opinion formed regarding them was that they were a variety of masons' or smiths' tools. Subsequently, however, it was suggested that they were spikes that had been attached to the lower ends of spear-shafts. The latter view derived strong support from the position in which an object closely resembling them occurred in the tomb of a Gaulish warrior at Connantre, Marne.[2] But, not to speak of other obstacles in the way of its acceptance, it was difficult to account for such an accumulation of spikes without the heads of the spears to balance them.

As the excavations proceeded, evidence was forthcoming which seems to negative both of the explanations given above. From the outlying ditch that covered the E. gate of the fort there were taken four objects of the same class. One of these, which is shown in fig. 40 (No. 4), appears to furnish a clue to the real nature of the whole set. The tang is long, out of all proportion to what would have been possible in a tool or in the spike of a spear-shaft; it measures $4\frac{1}{4}$ inches, or rather more than

[1] *Hist. Rom.*, l. 34.

[2] See Morel, *La Champagne Souterraine* (Album), pl. 31, fig. 5. We owe this reference to Mr Reginald A. Smith, of the British Museum, with whom the suggestion itself originated. Mr Smith has also kindly given us help in connection with some of the other finds.

twice as much as the head to which it belongs. Withal it is incomplete, the end showing clear signs of fracture. The *pilum*, or heavy javelin of the Roman soldier, is known to us, not only from the monuments, but also from actual specimens.[1] One of its leading characteristics was the great length of the iron head; inclusive of tang (if the word 'tang' be appropriate in the circumstances), it was about as long as the wooden shaft. If fig. 40, No. 4, be a fair index, we shall perhaps be justified in regarding the whole of the twenty-six objects in question as broken heads of *pila*. The variation in their size is entirely in favour of this hypothesis.[2]

Among miscellaneous articles of iron we may mention a finger-ring with setting for a stone or seal, two fragments of a small chain of close curb pattern—respectively 2 inches and $1\frac{1}{2}$ inches long—and a curious ingot, resembling an elongated barrel in shape, $2\frac{5}{8}$ inches from end to end, with a circumference of $2\frac{3}{4}$ inches at the centre and of $1\frac{7}{8}$ inches at the extremities. No. 27 of fig. 39 is a mounting of some sort; it is 5 inches long, and has apparently been fastened on leather. No. 26 of the same figure is particularly hard to find a use for. Had its inner edge been sharp, it might possibly have been interpreted as the blade of a bill-hook, such as sappers carry to this day; the end on the left is pointed as if meant to be driven into a wooden handle. But it is not improbable that the end on the right was at one time similarly pointed, while the edges are equally blunt all the way round, so that the suggested interpretation may at once be set aside.

(*b*) *Bronze.*—Objects of bronze (including kindred alloys) were not very numerous. The pot reproduced in fig. 26 (No. 2), which seems to be made of nearly pure copper, was found in the outer ditch at the S.E. corner of the fort. It is about 5 inches deep, with an outside diameter of $5\frac{1}{2}$ inches at the top and 4 inches at the bottom, and a girth of 20

[1] See Lindenschmidt, *Tracht und Bewaffnung des römischen Heeres*, Taf. xi. Nos. 12–15; also *Der Obergermanische-Raetische Limes*, Lief. vii. p. 24; Jacobi, *Das Römerkastell Saalburg*, p. 489, Taf. xxxix. Nos. 5, 6, 7, and 13.

[2] See *Bonner Jahrbücher*, 1895, pp. 240 f.

inches at its widest part. The simple device for attaching the handle has already been alluded to in another connection.[1] Fig. 43 shows, in actual size, an interesting little ornament that may once have been fastened to a helmet or some other article of wear; it was found in the outer ditch at the N.W. corner. The horned and bearded face which is embossed within the central circle may be meant for Jupiter Ammon, or it may be merely conventional. The maximum height of the relief is about $\frac{1}{4}$ of an inch. The colour of the whole is dull. One or two smaller pieces of bronze may be portions of harness mountings. The

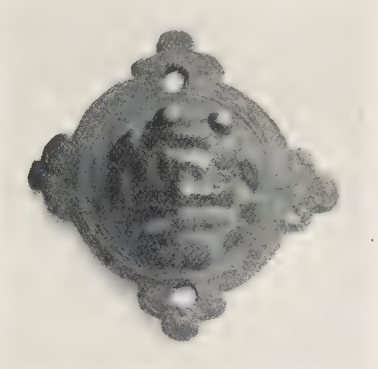


Fig. 43. Ornament of Bronze. ($\frac{1}{1}$.)

shapes to which they are cut show their decorative character, but their surfaces are perfectly plain. A bronze pin, nearly 5 inches long over all, is bent at its upper end into a circle which forms the head, the diameter of this part being $1\frac{1}{8}$ inches. A small ring, having an inside diameter of an inch, and a cup-shaped disc, slightly smaller in size, are of uncertain purpose. The latter is pierced in the centre by a hole $\frac{1}{4}$ of an inch in diameter.[2]

[1] See *supra*, p. 476.

[2] It rather resembles the 'button' of horn figured by Jacobi, *Das Römerkastell Saalburg*, Taf. lxxii. No. 5.

Three pieces of metallic foil with a bronze-coloured lacquer have apparently been wound round some article that has been square in shape. The original outline is still retained. They vary in size from 4 inches by 2 to $3\frac{1}{4}$ inches by $1\frac{1}{8}$, and the foil has a thickness of about $\frac{1}{64}$ of an inch. Two small rectangular plates of bronze—one an inch square, the other an inch high and $1\frac{1}{4}$ inches long—have evidently served as corner-pieces for the mounting of a square-sided box or casket. They have been treated in such a way as to give them a bright golden tint, which still retains its brilliance almost undimmed. The same treatment has been applied to three flat discs, just over an inch in diameter. Into the centre of two of these discs there have been riveted pins which project rather less than an inch from their surface. In one case the pin is round; in the other it is flat, and pierced by a hole at the upper end. Whatever the use of the third disc may have been, it is clear that the two with pins are of the nature of studs or fastenings for dress.[1] Eleven fragments of a bronze drinking-cup or quaich were taken out of the Well; they represent about one-half of the original vessel, which has been rather more than an inch deep, with a probable diameter of $1\frac{3}{4}$ inches at the bottom and $3\frac{1}{2}$ inches at the top. The bottom is flat, and the outward slope of the sides straight and regular. In this instance, the bronze has the appearance of tarnished silver. The same alloy occurs in a flat crescent-shaped fragment, which has belonged to a different vessel, and also in a flattish ring, with an outside diameter of $2\frac{3}{16}$ inches. A small lump of similar metal, about 2 inches in diameter, looks as if it had come from the bottom of a crucible, the shape of which it still retains.

(*c*) *Lead.*—Articles of lead were comparatively uncommon. One of the most interesting is a mason's plumb-ball, $1\frac{1}{8}$ inches in diameter, with an iron staple for the suspending cord; the under side of the crown of the staple shows very considerable marks of wear. A bullet-like object, $\frac{5}{8}$ of an inch in diameter and perfectly round, was discovered 2 feet

[1] On the method of use, see Jacobi, *Das Römerkastell Saalburg*, p. 503, Taf. lii. Nos. 1–3.

below the present surface, in the gutter on the W. side of the street that separated the Praetorium from the Storehouse. A lead pin, found near the Well, has a round shank nearly 2 inches long; its head is in the form of an oval ring, the major axis of which measures about an inch, the minor axis rather less than half as much. A disc, $1\frac{1}{4}$ inches in diameter and $\frac{1}{8}$ of an inch thick, looks as if it had been cut for a counter. One of its surfaces is slightly hollowed. Three small, unfinished lumps came out of the Well. One of them is pierced by a single hole; another, $2\frac{1}{2}$ inches in diameter by $\frac{1}{2}$ an inch in thickness, would appear to be from the bottom of a crucible.

### *I. Bone and Horn.*

Two manufactured articles of bone demand notice. The first is a small disc, $\frac{13}{16}$ of an inch in diameter, which is polished smooth on both sides, but has its upper surface decorated with a series of concentric circles. The second is a cylindrically shaped object, $3\frac{1}{2}$ inches long, which was found in Refuse-Hole No. 1. Although it is complete so far as length is concerned, a considerable portion of the whole is broken away. Enough, however, remains to enable us to reconstruct the original. The inside has been hollow. The extreme diameter has been about $\frac{3}{4}$ of an inch at the ends, gradually increasing towards the centre. The smooth outside surface is ornamented with markings—short lines, circles, and crosses—arranged in a simple pattern. Rather nearer one end of the cylinder than the other, two oblong holes have been cut lengthwise on opposite sides; they obviously correspond, as if intended to admit of something being inserted at right angles. A similar object is figured by Mr Roach Smith in his *Roman London*.[1] A small group of them was discovered many years ago in a cave at Borness in Kirkcudbrightshire.[2] Their purpose is quite uncertain. Mr Roach Smith suggests that the one he describes may be the "handle of some cutting instrument," and the authors of the account of the Borness find are inclined to share this view. Mr R. A. Smith, of the British Museum,

[1] Pl. xxxiv. 5.

[2] *Proceedings*, vol. x. (1875), pl. xxi.

Fig. 44. Objects of Horn. ($\frac{1}{2}$.)

writes to us that he thinks the articles may, perhaps, be cross-pieces for the ends of bridle-bits. In the present state of knowledge neither of these solutions seems entirely convincing.

Many of the numerous pieces of deer horn from the refuse-holes and the Well have evidently been sawn, probably because the part removed was to be turned to good account. Horn would be useful in various ways. It has certainly provided what is, so far, the most baffling problem that the excavations have yielded—six pieces found in different quarters of the fort.[1] Four of these are little better than fragments; the other two are shown in fig. 44. Thirty-two similar objects of horn were discovered in the armoury of the great legionary fortress of Carnuntum. These last have been discussed at some length by von Groller, whose description of them may be summarised as follows:[2] "Each of the fragments has once been a more or less considerable part of a larger piece which has had the form of a gently curving sabre-blade.

[1] One was found in the Well, one in Refuse-Hole No. 1, and the remaining four in the ditches.

[2] *Der Röm. Limes in Oesterreich*, Heft ii. p. 131, Taf. xxiv., figs. 22–24.

One side of this whole has been smooth, the other slightly convex. The corners of the broad end are sometimes rounded, sometimes angular. The narrow end terminates in a blunt, rounded point. The whole of the flat side and portions of the convex side have been roughened with a file. Near the broad end a rounded notch has been cut, stretching from the edge almost to the centre. In the great majority of cases the surface in the immediate neighbourhood of the notch has been polished very smooth, apparently by use. The position of the notch in the various pieces points to a distinction between 'rights' and 'lefts,' showing that a pair went to the making of each of the original articles. The two pieces of horn must have enclosed something between them; otherwise, there would have been no reason to cut them separately. These three parts, however, have not been fastened together by nails or rivets; the pieces of horn show no marks of perforation. They must, therefore, have been attached by some adhesive. What lay in the centre can hardly have been made of metal; leather or cloth would adhere to metal, but horn or bone would not. It is most probable that what was enclosed between the pieces of horn was made of wood." Beyond these general statements von Groller does not venture to go. He frankly admits that he has no satisfactory explanation to offer, and concludes by a reference to a similar piece of horn now in his own possession.[1] Before he acquired it, this last had for many years been in private hands at Hainburg. Of the place or circumstances of its discovery, nothing is known; but its presence at Hainburg rather points to its also having come from Carnuntum, which is close by. It differs from any of the certain Carnuntum specimens in having an iron nail driven through the centre of the broad end. From the length of the nail von Groller infers that the space between the two pieces of horn—and, consequently, the thickness of whatever lay between—cannot have exceeded three millimetres.

Turning now to the examples from Bar Hill, we find that five out of the six add practically nothing to the facts as noted by von Groller. One

[1] *Loc. cit.*, fig. 25.

represents a narrow end, which is brought to a fairly sharp point. Three are fragments of the body. The fifth, two views of which are given on the left in fig. 44, is a broad end. It will be observed that it is pierced with an iron nail, like the Hainburg specimen. The iron nail must be about the same size in both cases, as can be seen from the reproduction at the bottom of the left-hand side in fig. 44. An examination of the five reveals all the characteristic features enumerated in the description quoted above. Only in one respect does it suggest a correction. It appears by no means clear that the flat side has been roughened by the application of a file; the markings there—apart from those produced by the saw with which the horn was originally cut—may be purely accidental.

The sixth of the Bar Hill examples stands by itself. It is slightly larger than any of the others,[1] and is at the same time decidedly superior in finish. It is also more complete. While illustrating nearly all the points mentioned by von Groller—the peculiar shape, the characteristic notch,[2] the artificial roughening of portions of the convex side—it supplements his description in one or two ways that are rather important. As will be observed from fig. 44, where the two sides are shown on the right, the horn portion of this particular specimen has not been formed of two halves, as is usual. It has been made of a single piece. For a distance of about an inch and a quarter the broad end is convex on both sides. On one side the convexity ends abruptly along a line that exhibits all the signs of fracture. Inside this line is a narrow ridge, clean-cut and regular, hardly more than $\frac{1}{32}$ of an inch in breadth. At one extremity, a tiny fragment of the convex portion projects beyond the normal line of fracture in such a way as to make it evident that the clean-cut ridge may be taken as a measure of the space that had separated the two blades of horn. The interval is thus much smaller

[1] Without reckoning the curve, it is $10\frac{1}{2}$ inches long, and has originally been slightly longer. The notch is about $\frac{5}{16}$ of an inch deep.

[2] The notch, however, is not nearly so much worn round its edge as is the case in the other Bar Hill example.

than von Groller's maximum, and one cannot but admire the firmness of the hand and the fineness of the saw that succeeded in removing so thin a slice with so much neatness. We can readily understand why it was much more common to employ two separate pieces. At the same time, we are forced to doubt whether wood—or, for that matter of it, anything else—was ever permanently fastened between. Another feature of peculiar interest attaches to the specimen under discussion. In spite of the fact that the broad end is solid, it is pierced by a hole through which passes a brass rivet with a round head at either end. In the circumstances this can only have been intended for suspension; and the size of the rivet, a side view of which will be found in fig. 44, was adjusted to the size of the hole in such a way that, when suspended, the mysterious implement must have swung freely.

The surroundings of the Carnuntum find appear to indicate that it is in military equipment that the clue to the nature and purpose of the article will have to be sought. We have no definite hypothesis to advance, for we have hit upon none that is free from serious objection. But attention may be directed to a remarkable analogy. Objects of bone which bear a striking resemblance to the pieces of horn, and which seem to be their lineal descendants, occur in association with early mediaeval burials in Hungary. The only available descriptions are hardly sufficiently detailed to make close comparison possible.[1] Apart, however, from a general correspondence in size and shape, there is one feature common to both classes that points conclusively to a connection between them,—the rounded notch in the side at the broad end. The wear to which this has been subjected in the case of the horn articles proves that it must have played an important part in whatever use they were put to. Its recurrence in the same position in the bone objects from Hungary goes far to demonstrate that the two sets of things are substantially identical in character. A few particulars regarding the

[1] Joseph Hampel, *Alterthümer des frühen Mittelalters in Ungarn* (1905). Exact references are given below. We have to thank Dr Anderson for bringing the importance of this book to our notice.

discovery of some of the Hungarian examples may, therefore, be noted. At Szabadka a pair were found in a grave which Hampel assigns to the seventh or eighth century. This grave also yielded, among other relics, the remains of one or two weaving instruments.[1] At Győr, two graves (not dated by Hampel) each contained a single pair. In one instance the pieces of bone were lying side by side close to the *tibia* of the skeleton, the narrow end stretching down to the ankle.[2]

### *J. Animal Remains.*

A very large quantity of bones of animals were collected from the refuse-holes. For the most part these must represent the flesh food of the garrison. Dr T. H. Bryce, of Glasgow University, was good enough to examine them carefully, and has furnished us with the following interesting report:—

> Comparatively few species are represented. The great mass of the bones belong to oxen and sheep, and the chief interest centres in the identification of the breeds of these domestic animals.
>
> The *ox* is represented by a considerable number of skulls, several of which are nearly complete, as well as by many metacarpals, metatarsals, scapulae, and vertebrae. The skulls vary much in size. Some are horned, and some without horn cores. The largest specimen measures 20 inches from the ridge between the horn cores to the top of the premaxilla, and $16\frac{1}{2}$ inches between the tips of the horn cores. The horn cores vary very much in length, but many of them are so short that the breed was certainly a short-horned breed. A great many of the scapulae, metacarpals, and metatarsals further indicate a small breed of cattle, and, judging from the characters of the frontal bone and the direction of the horns, we can certainly refer some specimens to the dwarf Celtic shorthorn (*Bos longifrons*). Not a few, however, seem to be too massive for this variety, and several of the skulls have horns too long and upturned for the breed in its purity. These large-horned specimens do not represent *Bos primigenius*, and it must be concluded that the Romans here had a larger, probably a mixed, breed of oxen, besides the small Celtic shorthorn.

[1] See *op. cit.*, vol. ii. pp. 839 f.; and vol. iii. (Atlas), Taf. 494, Nos. 2 f. For the date, see vol. i. p. 849.

[2] *Op. cit.*, vol. ii. pp. 812 f.; and vol. iii., Taf. 481, Nos. 1 f.

The *sheep* is represented by some complete skulls, and also by metacarpals, metatarsals, and other bones. The skulls are specially small and narrow, and these are to be associated with a series of very long and slender metacarpals and metatarsals. I have compared in detail these bones with those of the small slender-legged Soa sheep of St Kilda, and I find that they correspond exactly. This slender-legged breed has been found on many sites of the Romano-British period, and the comparison with the Soa sheep has been worked out by General Pitt Rivers in the account of his excavations in the Romano-British village

Fig. 45. Skulls of *Bos longifrons* ($\frac{1}{9}$).

of Rotherley, Wilts.[1] A few of the metacarpals do not differ in their dimensions from those of the modern sheep. It is therefore probable that the slender-legged breed was not the only one possessed by the Romans in this fort.

The *deer* is represented by many horns. They are all those of the red deer; the roe and the fallow are not present.

The *horse* does not seem to have been used as food. There was only one bone—a mandible—among the remains. It is a short and specially narrow jaw, indicating a small breed of animal.

[1] Pitt Rivers, *Excavations in Cranborne Chase*, vol. ii. pp. 226 ff.

The *dog* is indicated by two skulls as well as by other bones. These belong to two breeds—the one a large, the second a small variety. The skull of the large dog is almost certainly that of a domestic animal, and not that of a wolf.

The following is a list of the animals I have identified among the remains:—

1. Ox (*Bos longifrons* and a mixed breed).
2. Sheep (*Ovis aries var.*)—slender-legged variety.
3. Pig (*Sus scrofa*). The remains are those of the domestic boar, but the wild boar is represented by two tusks.
4. Dog (*Canis familiaris*)—two breeds.
5. Horse (*Equus caballus*)—pony breed.
6. Fox (*Canis vulpes*).
7. Red deer (*Cervus elephas*).

It should be added that among the animal bones there occurred a number of human metacarpal and metatarsal bones and phalanges—the relics of the work either of the surgeon or of the executioner.

Besides animal food, in the narrower sense of the term, the soldiers of the garrison also ate shell-fish. The fondness of the Romans for this delicacy is matter of common knowledge. They seem to have eaten almost every variety that was not positively unwholesome.[1] The shells found at Bar Hill belonged to one or other of two kinds—the common oyster (*Ostrea edulis*, Linn.), and the horse mussel (*Modiola modiolus*, Linn.).[2] There is nothing surprising in the occurrence of the former. As early as Juvenal's time, long before the Vallum of Pius was built, British oysters were imported into Italy.[3] But the popularity of the horse mussel is rather contrary to the canons of modern taste; nowadays it is eaten but rarely, and then only under pressure of dire poverty.[4] A somewhat curious fact remains to be recorded. A few of the oyster-shells were found in the Well; the rest, and also the whole of the mussel-shells, came from the refuse-holes in the *retentura* or southern half of the fort,

[1] *Cf.* Celsus, ii. 29, "*cochleae . . . ostrea, pelorides, echini, musculi, et omnes fere conchulae.*"

[2] Dr R. H. Traquair, F.R.S., of the Royal Scottish Museum, has kindly verified these identifications.

[3] Juvenal, *Sat.* iv. 140.

[4] George Jeffreys, *British Conchology*, ii. p. 112.

the most prolific being Refuse-Hole No. 6. Neither of the two great pits in the *prætentura*, rich as they were in bones, yielded a single shell. Has this any ethnographical significance? The inscriptions tell us of the presence in the fort of two regiments of different nationalities—one from Syria, the other from the Low Countries.[1] Can we venture to suppose that the Hamii shared the passion of the Romans for shellfish, while the Baetasii cared for none of these things? Or are we to invert the supposition? Or ought we rather to look upon the distribution of the shells as nothing but an accident, due perhaps to a difference in date, or to some variation in the commissariat arrangements?

### *K. Miscellaneous.*

Under this head there fall to be included a very few articles to which there has as yet been no opportunity of referring. A good many hazelnuts were found in the Well, and in some of the refuse-holes. The Well was also responsible for one or two walnuts—apparently grown in an uncongenial climate, as they were stunted and had no kernels. The various pieces of hemp rope picked up here and there would make a length of 10 or 12 feet in all; the average diameter was $\frac{5}{8}$ of an inch. Bark rope was also in use; several fragments were recovered from the detached ditch on the E. side of the fort. Three bunches of plaited horsehair have possibly been harness trappings; they were found in the ditches. Nothing else appears to call for particular mention.

## VI. Summary of Results.

Before the record is closed, it may be convenient to sum up shortly the main results of Mr Whitelaw's excavations. Archaeology has for the first time been brought into immediate, certain contact with the handiwork of Agricola. That general's reputation as a skilful officer of engineers has been strikingly confirmed. On the other hand, his 'conquest' of Caledonia would seem to have reduced itself to the level of a brilliant raid, followed by a brief and precarious tenure of a few

[1] See *supra*, p. 487.

advanced positions. His tiny garrisons in the heart of the enemy's country, far beyond their base of operations, would be constantly exposed to serious menace. For their regular supplies they must have been dependent on the support of the fleet. Tacitus attributes the abandonment of this bold adventure to the jealousy of Domitian. In the light of the prolonged struggle that we know to have ensued, such a sinister explanation is surely unnecessary. At any rate, the emperor, in insisting on withdrawal, showed a far sounder appreciation of the gravity of the frontier problem than had been displayed by his lieutenant. Two generations were to pass before the Roman outposts were again pushed forward to the isthmus; the turbulent warriors whom Lollius Urbicus sought to keep in check were the children's children of the men that had fought against Agricola. In the interval much blood had been spilt, and Hadrian's efforts at pacification had given the Romans a fresh base on the line from Tyne to Solway. Yet the force now planted on the Bar Hill was far larger than the mere handful that had essayed to hold it sixty years before. The significance of that fact is not to be disputed.

But the second or Antonine fort is different. We shall misinterpret it if we treat it as an isolated phenomenon. It marks the definite inclusion of Southern Scotland within the sphere of organised frontier defence, and the exposing of its outlines has revealed what might have been anticipated. The fort is typical of many more that lay scattered at strategic points along the marches of the Roman Empire. These *castella*, as they were called,—everywhere garrisoned by auxiliaries like the Baetasii and the Hamii,—were the pawns in the grim game of frontier war. Behind them the real fighting strength of the army was concentrated in legionary fortresses, like Deva and Eburacum in Britain, like Novaesium on the Gaulish side of the Rhine, or like Carnuntum on the southern bank of the Danube. Viewed in this light, the *castellum* on the Bar Hill does not differ in general plan from others of its class. The central space in the Praetorium, it is true, presents a peculiarity that is hard to understand. And there is another feature

calling for remark. Usually the bath-house was built a little distance off, outside the main enclosure; here it was within the fortifications. The 'caespiticious' rampart, too, is interesting. It links Bar Hill with Rough Castle and with the great Vallum, to which both alike belonged. The defences, however, have been somewhat simpler than the corresponding works in either of the two other Vallum 'stations' recently explored,—less solid than the stone walls of Castlecary, less impressive than the formidable lines that still rise round Rough Castle. Comparison between the three interiors is scarcely possible. At Bar Hill the main outlines were fairly intelligible. In neither of the other cases did any clear idea of the whole emerge. The Praetorium in each was easily recognised, and the Storehouse was unmistakable. A few additional buildings were located, but their details were disappointingly obscure; we do not know, for instance (as we do at Bar Hill), in what direction the barracks of the soldiery were placed, nor of what material they were built.

In the matter of relics, the Bar Hill excavations were fruitful to a quite exceptional degree. It is practically certain that all of these belong to the period of the Antonine occupation. The life they mirror for us betrays small sign of luxury. It is a life of hard work and hearty feeding, with but little extravagance or refinement about it. What we see is not the Roman himself, but the provincial who has assimilated the practical side of Roman civilisation. It is noteworthy that, in glancing through the finds, one is reminded far more frequently of the artisan than of the soldier. One realises that the whole site was not merely a fort, in the modern sense of the word. It was also a permanent military settlement. Nothing brings this home so vividly, or with so distinctively human a touch, as the heaps of shoes that have been worn by women and by children. These followers cannot, of course, have dwelt within the gates; that would have been a grave breach of military law. They must have been housed outside, with traders and others, in an *annexe* or civil settlement such as was invariably associated both with the *castella* of the auxiliary cohorts and

with the *hiberna* of the legions. At Bar Hill the *annexe* seems to have lain towards the East. That is the position suggested by such knowledge as we possess of other civil settlements along the line of the Vallum. What is perhaps more to the point, the situation of the Castle Hill Park is admirably suited for the purpose. Further, attention has already been drawn to possible marks of its having been occupied in Roman times.[1] It may now be added that trial cuttings on the ridge leading from the fort to the highest peak have produced more definite traces—the remains of fireplaces, and abundant fragments of pottery. If the whole of this quarter could be as thoroughly explored as the area of the fort itself has been, it is probable that considerable additions would be made to our stock of information. The *annexe* must have had its refuse-holes as surely as the fort, and it is not impossible that it contained a larger number of inscriptions.

The relics have helped us to a clearer appreciation of the character of the occupation. How far do they throw light upon its history? The inscribed slab shows that the fort was built in the reign of Antoninus Pius. The coins, unfortunately, are less instructive than is usual. They do not really carry us any farther than the slab, for the solitary denarius of Marcus Aurelius—or, rather, the original on which it is modelled—is not later than 143 A.D. But the scores of cast-off shoes, the odds and ends of refuse, and the innumerable potsherds are all eloquent of years of continuous habitation. They justify us in concluding that Bar Hill was held till Southern Scotland was abandoned—that is, till some crisis that probably fell within the reign of Commodus.[2] Finally, we get a lurid glimpse of the last scene of all. It is plain that there was a great conflagration on the retirement of the defenders. The hands that fired the woodwork were without doubt the same hands as wrecked the Praetorium and cast the debris down the Well. Were they Roman or Caledonian? Was the destruction wrought in sheer vindictiveness? Or was there a deliberate intention to try and render

[1] See *supra*, p. 405.

[2] *The Antonine Wall Report*, pp. 158 f.

the fort untenable by a victorious foe? Was the altar thrust out of sight to save it from possible desecration? Or was it thrown down in contemptuous defiance of the gods of the retreating soldiery? These are questions that inevitably suggest themselves. In the meantime, imagination alone can return an answer. One thing, however, it is safe to say. The occurrence of similar phenomena elsewhere—at Birrens, for instance, and probably at Newstead—affords some ground for believing that the proceedings at Bar Hill were part of a general policy. If this be really so, then careful excavation upon other sites, combined with the accurate observation of minute details, may ultimately put into our hands a clue that will transform conjecture into certainty.

## Appendix.

The following is a complete list of the objects that were taken out of the Well :—

A large amphora (p. 468), 3 fragments of 'Samian' ware; 21 free-stone columns, or portions of columns, of a total length of 64 feet, along with 14 bases and 11 capitals (p. 536), a large altar with inscription (p. 482), 3 considerable fragments of an inscribed slab (p. 484), several ballista stones, varying in diameter from $4\frac{1}{2}$ to $1\frac{1}{4}$ inches, a piece of flint pebble, a black tessera for mosaic pavement (p. 480), a piece of black slaty stone, smoothed, a piece of shale, 2 round discs or counters of black composition, small object resembling a coin-mould (p. 493), 2 pieces jasper stone; about 30 pieces of oak, varying in length from 9 feet to 1 foot, in breadth from 6 inches to 3 inches, and in thickness from 5 inches to 2 inches (p. 494), portion of overhead beam of Well, with 2 pieces of pulley wheel (p. 494); 12 small pieces of leather, 2 boots; 56 pieces of 3-inch by $\frac{1}{4}$ strap iron, of a total length of 47 feet (p. 513), a door-latch of iron (p. 513), 10 pieces of 1 to $1\frac{1}{4}$ inch flat iron, with spikes riveted on (p. 513), 7 pieces of $1\frac{1}{8}$-inch flat iron, perforated with holes (p. 513), several other pieces of varying breadths, 4 iron hold-fast, swivel-jointed, hanging cleeks, 6 pieces of iron of various shapes, 3 pieces of welded iron cleeks, more than 50 miscellaneous pieces of scrap iron, including nails, bolts, etc., 1 piece flat iron, welded, 1 foot 4 inches long by $1\frac{1}{2}$ inches broad by $\frac{1}{2}$ an inch thick, 1 bag full of nails and wrought-iron tools, etc. (p. 516), 3 pieces of iron bridle-bits with rings (p. 515), 1 bridle-bit with closing cleeks on either side (p. 515), 3 pieces of $1\frac{1}{2}$-inch strap iron ring, one 5 and two $3\frac{1}{2}$ inches in diameter

(p. 515), 4 complete iron hoops of bucket and 8 fragments (p. 513), 1 iron harness buckle (p. 515), 1 iron ferrule, $1\frac{1}{2}$ inches by $1\frac{1}{4}$, a piece of a sickle-blade, $11\frac{1}{2}$ inches long by $1\frac{3}{4}$ broad (p. 515), 2 chisels, 1 wooden handle with tapered iron ferrule, 1 leg of a pair of compasses (p. 515), 1 ring of round iron having an inside diameter of 1 inch and an outside diameter of $1\frac{1}{2}$, another iron ring with an inside diameter of $1\frac{1}{8}$ and an outside diameter of $1\frac{3}{8}$ inches, 1 piece of round-backed iron, 1 foot 5 inches long by $1\frac{1}{4}$ inches broad (p. 517), 22 wedge-shaped articles of iron from $1\frac{1}{4}$ to $2\frac{3}{4}$ inches in length (p. 519), 7 three-winged arrow-heads (p. 517), 5 objects somewhat similar but open (p. 518), 1 iron finger-ring (p. 520), 1 punch of hard metal (p. 516), 11 pieces of a bronze drinking-cup (p. 522), 1 piece of another vessel of bronze, piece of bronze from crucible, 3 pieces of metallic foil with bronze lacquer (p. 522), 1 small bronze harness ornament, portion of bronze ring with diameter of about 1 inch; 3 pieces of lead (p. 523); 13 coins (p. 509); 3 small pieces of horn; 1 red deer's horn; 2 red deer's hoofs; 1 ox's horn; 2 large shoulder-blades and various other bones of ox; 1 shoulder-blade, 2 jaw-bones, and 1 horn of sheep; forepart of skull of very small carnivorous animal, perhaps a weasel; 17 ox's teeth, and a number of tusks and teeth of other animals; several oyster-shells; quantity of hazel-nuts; one or two walnuts; twig of hawthorn; skin of *scleroderma*.

## Note on the Architectural Fragments.

By Thomas Ross, F.S.A.Scot.

The collection of architectural details from Bar Hill is certainly the finest hitherto found in Scotland. The forts previously excavated have provided abundant evidence of extensive buildings, skilfully planned and involving the use of pillars, pilasters, buttresses, arches, apsidal alcoves of rooms, and such like; but, although we could infer from these the existence of various architectural features, we were unable to say what they were like, owing to the fact that most of the stones had been removed. We are now in a much better position to form a clear idea of the real character of the architecture of Roman *castella* in Scotland.

The remains, with the exception of a capital from Refuse-Hole No. 7, were found in the Well, probably not far from the place they originally adorned. They included shafts of pillars, capitals, and bases, all wonderfully well preserved. The shafts (see fig. 14) are circular and in

various lengths, the tallest fragment measuring 5 feet 4 inches, and tapering in this height from 13 to 12 inches in diameter. Three other fragments are a few inches shorter, and other pieces decrease in length to 4 feet 9 inches, 3 feet 6 inches, and 1 foot 9 inches. The diameter of the shafts at the neck varies from 10 to 12 inches. If the pieces, which numbered twenty-one in all, were placed end to end, their united length would be about 64 lineal feet.

The twelve capitals have each a circular beaded neck-moulding, about 2 inches deep, from which they spread out in a concave bell shape to a square

Fig. 46. Carved Capital.

Doric abacus. They are of different sizes, the height from the under side of the neck-moulding to the top bed varying from $10\frac{1}{2}$ to $13\frac{1}{2}$ inches, and the depth of the abacus from 3 to 6 inches. In no instance is the abacus exactly square. A few examples of the variations may be of interest:—

16 inches × $14\frac{3}{4}$ inches
$16\frac{1}{4}$ ,, × $12\frac{3}{4}$ ,,
$15\frac{1}{4}$ ,, × $14\frac{1}{8}$ ,,
$12\frac{3}{4}$ ,, × $12\frac{5}{8}$ ,,

One of the capitals (fig. 46) is carved with upright leaves in the bell. The carving is confined to two sides, and the leaves are roughly cut—

blocked out rather than finished. This particular example is 12 inches high, the abacus being $3\frac{1}{4}$ and the necking 2 inches deep. The square of the abacus is 15 by $13\frac{1}{2}$ inches, and the diameter of the shaft is 11 inches. Another capital (fig. 47) is entirely square on plan. The neck-moulding, however, and part of the shaft are half-rounded. The abacus, which is 5 inches deep, is divided by an incised line, and the lower part is decorated with a neat, well-cut, and well-preserved chevron ornament. The group contains another fragment of a similar capital

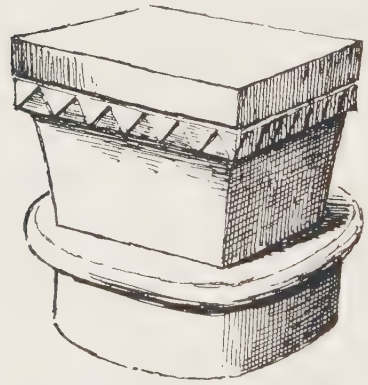


Fig. 47. Square Capital.

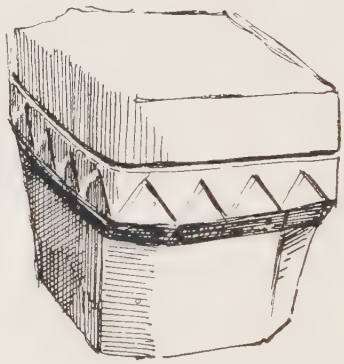


Fig. 48. Chamfered Capital.

(fig. 48); but instead of being square, this latter has its angles rounded or chamfered. The chevron is the same in both. It is possible that these two capitals had shafts of a corresponding section, and that they were wall-responds. The fact that they are left unfinished on one side is in favour of this view. It may be added that, in 1847, there was discovered at Castlehill Fort, near the western end of the Vallum, the base of a rounded pillar (fig. 49) having the chevron carved on the square plinth, exactly as in the present example. It was lying beside an inscribed stone bearing the name of the Twentieth Legion. The two capitals shown in

fig. 50 will serve to illustrate the general design of all. It will be observed that one of them has been rudely hacked into, not

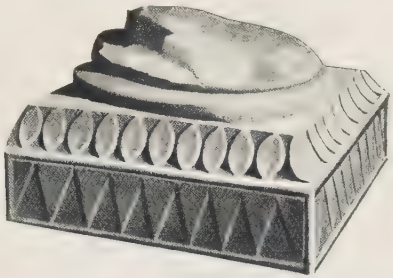


Fig. 49. Base from Castlehill Fort.

improbably in order to obtain a fastening or rest for a piece of timber required by some alteration.

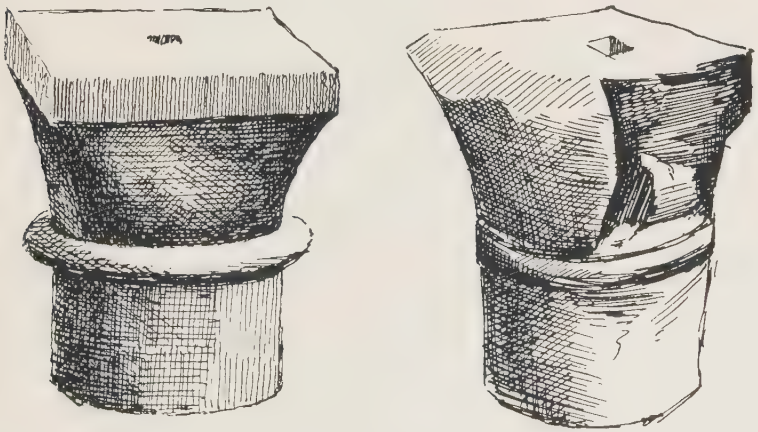


Fig. 50. Two Capitals.

The bases, of which there are fourteen, are circular without square plinths (fig. 51). They are all about $8\frac{3}{4}$ inches high, and consist of two torus mouldings, separated by a square sectioned recess instead of the

usual scotia moulding of the Attic base. The outline sketch of fig. 51 gives the section of the mouldings drawn to scale. In two instances the torus mouldings of the base have each a nick cut in them. It is not possible to determine accurately from the surviving data the original height of the whole pillars; but it is not probable that base, shaft, and capital would exceed a total of 10 feet from the floor.

Two of the columns present a peculiarity calling for notice. They

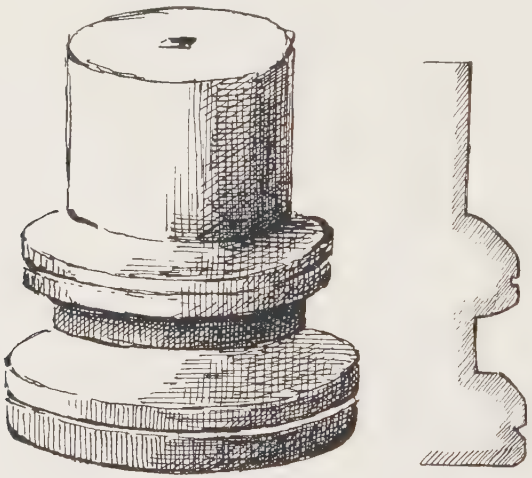


Fig. 51. Base of Pillar and Section.

have each (fig. 52) a corbel wrought upon the face. The corbels are $12\frac{3}{4}$ inches high, and the top forms a flat shelf, which is 9 inches wide with a projection of $3\frac{1}{2}$ inches. Half an inch above the shelf there is a mortise-hole or pocket, $2\frac{1}{2}$ inches deep by $2\frac{1}{2}$ inches wide, cut into the shaft in such a way that its floor slopes downwards at an angle of about 45°. In the case of one of the shafts, the mortise-hole is broken away but the corbel remains. This contrivance is evidently a rest and catch for a timber strut to assist in supporting a lintel, the strut having had

a tenon to fit into the mortise-hole. The strut with tenon shown alongside the shaft, in fig. 52, will sufficiently explain what is meant. The circumstance that this feature occurs on only two of the shafts justifies us in inferring that the pillars of the cloister or verandah were not all equally spaced, but that one space was so much wider than any of the others that the connecting lintel required to be supported by

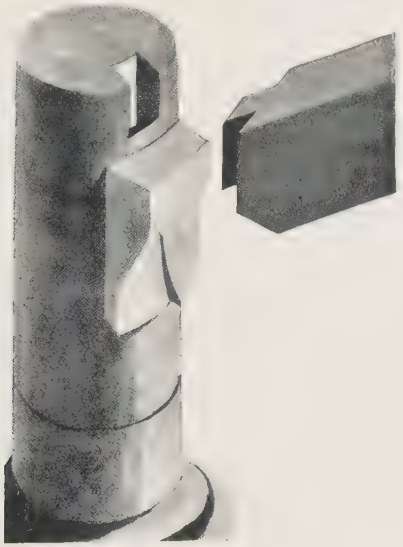


Fig. 52. Pillar with Corbel.

struts. Probably this was a doorway leading from the front court of the Praetorium or Principia to the central space. It may be a further inference that there were timber lintels laid from pillar to pillar. On the other hand, this fort yielded several examples of the mortise-and-tenon principle being wrought out in stone.

Another portion of a shaft, about 1 foot 9 inches high, has cut in it a square slot-hole, about $4\frac{1}{2}$ inches long by $2\frac{1}{2}$ broad and $2\frac{3}{4}$ deep. This is suggestive of a parapet railing from pillar to pillar. On still

another short fragment of a column there is a round hole $1\frac{1}{2}$ inches in diameter by $2\frac{3}{4}$ inches deep. All the shafts show very distinct chisel-marks running the long way of the stone. Over and above, some have rough, decided scores, which would appear to be intentional, although one cannot be quite certain upon this point. Most of these stones are broken off roughly at their ends, and within one foot or so of the top the larger ones taper considerably—the result, perhaps, of accident or of weathering.

The details of base, shaft, and column, as above described, are sufficient to establish a scale of architectural effort in our Scottish forts. It may be admitted that they are rude in treatment; but they are evidence of leisure, security of position, and intention to remain in occupation of buildings so adorned. The three architectural features illustrated are strictly classical. The bases have a rough resemblance to the Attic base; the columns are well wrought with a taper; the capitals are quite unlike Roman capitals, but rather remind us of eleventh or twelfth century work. In this last respect there is a very striking analogy in the use of the chevron.

As to the position occupied by the pillars there can be little or no doubt. They were connected with the verandah or cloister that ran round the entrance court of the Praetorium. This conclusion is made certain by what is known regarding the arrangement of the corresponding building elsewhere. At Birrens a row of six pillars separated the entrance court from the central space, while in the court itself there were found the base stones of a row of four timber pillars that had supported the verandah. At Housesteads, in 1898, there were discovered in the Praetorium the foundations of a row of six pillars in a position exactly similar to the six at Birrens, while pillars for supporting a verandah were proved to have run round three sides of the court.

Most of the stones of which we have been speaking, as well as most of the similar stones found in other forts, exhibit holes which are either mortise-holes for a dowel of metal, stone, or wood, or lewis-holes made for lifting the stones with a crane. The former explanation seems the

more probable. The stones are not sufficiently heavy to demand the use of a crane, nor was their position so high above ground as to make one necessary. The holes often appear on the bases of the pillars, although these rested on the level of the floor. On the other hand, it is curious that no traces of dowels have ever been reported. It is worth noting that most of the capitals and bases have a portion of the shaft wrought in the same stone; the length of the portions varies greatly, the maximum being 12 or 14 inches. These upper and lower beds are all fairly perfect, unlike the ends of the shafts. The practice of cutting the capital and as much as a foot of the shaft out of a single stone entailed a waste, which can have been a matter of no consideration.

On contrasting these and other relics of actual Roman buildings in Scotland with the decorative representations of Roman architectural work which are found on altars, tablets, or monuments, one cannot but be struck with the widely divergent architectural styles which they exhibit, even although they are contemporary. As we have seen, the Bar Hill details are rude in execution and design, while at the same time they show a knowledge of the classic features of shaft, base, and capital. So strangely do they differ in size and in method of reaching their purpose that, had they not all been found together, it might have been supposed that they had belonged to different buildings. The capitals in themselves have no affinity with any of the Roman orders, although they are exactly of the same type as those developed in Western Europe some centuries later. Further, we have noted in the mortise-pockets an indication that the pillars were not connected with arches but with lintels, and these probably of wood. Had they been of stone, they would have had the same chance of being preserved as had the shafts. Had arches been used, some of the voussoirs would surely have survived. One can hardly suppose that these shafts and capitals had supported a regularly designed classic entablature and cornice of stone, or even a wooden imitation of these. Probably there was only a simple beam.

On the other hand, if we turn to the architectural representations on single monuments, such as the tablet from the Antonine Vallum[1] illustrated in fig. 53, we are surprised at the marked difference of style and workmanship. We can see that the tablet must have been designed and executed by some one who was perfectly familiar with contemporary Roman architecture. Its fluted and beaded pilasters, with the Attic

Fig. 53. Tablet from Chapel Hill on the Antonine Vallum.

base and Corinthian capital, are quite after the Roman manner, and the same may be said of cornice and pediment. The reclining figure holding the laurel wreath is likewise the work of a competent artist. Again, the altar in the National Museum, from the Well at Birrens (fig. 54), has

[1] Figured in Plate i., fig. 1, of *The Roman Stones in the Hunterian Museum, Glasgow*, by James Macdonald, LL.D., 1897.

on the front of its capital a representation of a round arched gateway, the architectural features of which combine the characters of both the above schools. It has an archivolt giving all the effect of a double facia, and the circular alcove is decorated with the radiating shell

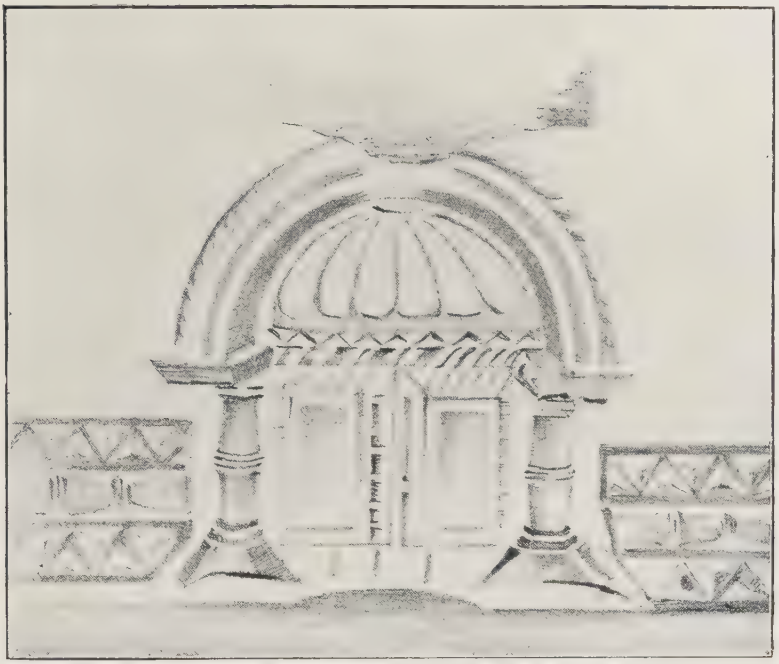


Fig. 54. Arched Gateway, on Altar from Birrens.

ornament so characteristic of Roman work. The ingoing of the gateway has a round, baluster-shaped column, reminiscent of the style of a long subsequent period. This does not carry the archivolt, which is supported by a moulding, thus revealing the work of an unskilled hand. The surbase of the wall is ornamented on each side of the gateway with three tiers of decoration, closely resembling eleventh or twelfth century

work. The general conclusion—a conclusion applicable to sculpture as well as to architecture—would seem to be that, in North Britain in Roman times, there were competent artists busy, men acquainted with the style of Southern art, but that much of the execution was left in untrained hands. The remarkable thing is that these untrained artists carried out the work along lines which (one may say) perished with them, only to be revived centuries later in Christian times.

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